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L108 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:286255 HCAPLUS
DN 137:24678
TI Method for the calculation of ion exchange properties of **hydroxyl** - and fluoroapatites in aqueous solutions of various cationic and anionic compositions
AU Dobrygnev, S. V.; Bykov, A. P.; Bogach, V. V.; Beskov, V. S.
CS Novomosk. Inst. RKhTU im. D. I. Mendeleeva, Novomoskovsk, Russia
SO Khimicheskaya Promyshlennost (Moscow, Russian Federation) (2002), (2), 44-50
CODEN: KPRMAW; ISSN: 0023-110X
PB Izdatel'stvo "TEZA"
DT Journal
LA Russian
CC 66-4 (Surface Chemistry and Colloids)
AB Two alternative methods were developed for calcg. the Gibbs energy of formation of surface compds. during ion exchange. Based on the results of such calcns. series of cations and anions were detd. according to their capability to substitute in aq. solns. of electrolytes for Ca2+, **OH-**, and F- in **hydroxyl**- and fluoroapatites. The Ca2+, **OH-**, and F- ion exchange properties were calcd. for **calcium apatites** of various compns.
ST ion exchange hydroxylapoatite fluoroapatite surface compd
IT Free energy of formation
Ion exchange
Surface reaction
(method for the calcn. of ion exchange properties of **hydroxy**- and fluoroapatites in aq. solns. of various cationic and anionic compns.)
IT **471-34-1, Calcium carbonate**, processes
513-77-9, Barium **carbonate 546-93-0, Magnesium carbonate 1305-62-0, Calcium hydroxide**, processes 1306-05-4, Fluorapatite (Ca5F(PO4)3)

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
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jan.delaval@uspto.gov

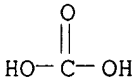
1306-06-5, Hydroxylapatite 1309-42-8, Magnesium dihydroxide 1317-37-9, Iron sulfide FeS 7487-88-9, Magnesium sulfate, processes 7720-78-7 7727-43-7, Barium sulfate 7758-94-3, Iron dichloride 7778-18-9, Calcium sulfate 7783-40-6, Magnesium difluoride 7783-46-2, Lead difluoride 7783-48-4, Strontium difluoride 7783-49-5, Zinc difluoride 7786-30-3, Magnesium chloride, processes 7787-32-8, Barium difluoride 7789-28-8, Iron difluoride 7789-41-5, Calcium bromide 7789-46-0, Iron dibromide 7789-48-2, Magnesium bromide 7789-75-5, Calcium fluoride, processes 10022-31-8, Barium nitrate 10043-52-4, Calcium chloride, processes 10124-37-5, Calcium nitrate 10290-71-8, Iron carbonate 10361-37-2, Barium chloride, processes 10377-60-3, Magnesium nitrate 10553-31-8, Barium bromide 12032-36-9, Magnesium sulfide 13780-06-8, Calcium nitrite 14013-86-6, Iron dinitrate 15070-34-5, Magnesium nitrite 17194-00-2, Barium hydroxide 18480-07-4, Strontium dihydroxide 18488-91-0, Iron nitrite 18624-44-7, Iron dihydroxide 19783-14-3, Lead dihydroxide 20427-58-1, Zinc dihydroxide 20548-54-3, Calcium sulfide 21109-95-5, Barium sulfide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(method for the calcn. of ion exchange properties of hydroxy- and fluoroapatites in aq. solns. of various cationic and anionic compns.)

IT 12015-72-4, Calcium chloride phosphate (Ca5Cl(PO4)3) 12015-73-5, Calcium fluoride phosphate (Ca5F(PO4)3) 12069-38-4, Calcium carbonate phosphate (Ca10(CO3)(PO4)6) 12133-38-9, Calcium fluoride hydroxide phosphate (Ca10F(OH)(PO4)6) 12167-74-7, Calcium hydroxide phosphate (Ca5(OH)(PO4)3) 12394-20-6, Calcium chloride fluoride phosphate (Ca10ClF(PO4)6) 12514-27-1, Calcium bromide phosphate (Ca5Br(PO4)3) 12514-95-3, Calcium strontium hydroxide phosphate (Ca9Sr(OH)2(PO4)6) 55964-49-3, Calcium phosphate sulfide (Ca10(PO4)6S) 56626-74-5, Calcium strontium fluoride phosphate (Ca9SrF2(PO4)6) 117003-84-6, Calcium chloride hydroxide phosphate (Ca5Cl0.5(OH)0.5(PO4)3) 125913-73-7, Calcium phosphate sulfate (Ca10(PO4)6(SO4)) 199581-80-1, Calcium lead fluoride phosphate (Ca9PbF2(PO4)6) 220960-92-9, Calcium lead hydroxide phosphate (Ca9Pb(OH)2(PO4)6) 303955-02-4, Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) 374809-26-4, Calcium nitrate phosphate (Ca5(NO3)(PO4)3) 434934-12-0, Barium calcium hydroxide phosphate (BaCa9(OH)2(PO4)6) 434934-13-1, Calcium iron hydroxide phosphate (Ca9Fe(OH)2(PO4)6) 434934-15-3, Calcium zinc hydroxide phosphate (Ca9Zn(OH)2(PO4)6) 434934-16-4, Barium calcium fluoride phosphate (BaCa9F2(PO4)6) 434934-17-5, Calcium iron fluoride phosphate (Ca9FeF2(PO4)6) 434934-18-6, Calcium magnesium fluoride phosphate (Ca9MgF2(PO4)6) 434934-19-7, Calcium zinc fluoride phosphate (Ca9ZnF2(PO4)6) 434934-21-1, Calcium nitrite phosphate (Ca5(NO2)(PO4)3) 434934-22-2, Calcium fluoride nitrate phosphate (Ca10F(NO3)(PO4)6)

434934-23-3, **Calcium** fluoride nitrite **phosphate** (Ca10F(NO2)(**PO4**)6) 434934-24-4, **Calcium** bromide fluoride **phosphate** (Ca10BrF(**PO4**)6) 434934-25-5, **Calcium hydroxide nitrate phosphate** (Ca10(**OH**)(**NO3**)(**PO4**)6) 434934-27-7, **Calcium** bromide hydroxide **phosphate** (Ca10Br(**OH**)(**PO4**)6) 434934-28-8, **Calcium hydroxide** nitrite **phosphate** (Ca10(**OH**)(NO2)(**PO4**)6)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(method for the calcn. of ion exchange properties of **hydroxy**- and fluoroapatites in aq. solns. of various cationic and anionic compns.)

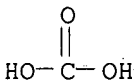
IT **471-34-1, Calcium carbonate**, processes
546-93-0, Magnesium carbonate
1305-62-0, Calcium hydroxide, processes
1306-06-5, Hydroxylapatite 1309-42-8, Magnesium dihydroxide **7783-40-6, Magnesium** difluoride **7786-30-3, Magnesium** chloride, processes
7789-41-5, Calcium bromide **7789-48-2, Magnesium** bromide **7789-75-5, Calcium** fluoride, processes **10043-52-4, Calcium** chloride, processes
10124-37-5, Calcium nitrate 10377-60-3, Magnesium nitrate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(method for the calcn. of ion exchange properties of **hydroxy**- and fluoroapatites in aq. solns. of various cationic and anionic compns.)

RN 471-34-1 HCAPLUS
CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



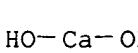
Ca

RN 546-93-0 HCAPLUS
CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Mg

RN 1305-62-0 HCAPLUS
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 1309-42-8 HCAPLUS
CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)

HO—Mg—OH

RN 7783-40-6 HCAPLUS
CN Magnesium fluoride (MgF2) (9CI) (CA INDEX NAME)

F—Mg—F

RN 7786-30-3 HCAPLUS
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)

Cl—Mg—Cl

RN 7789-41-5 HCAPLUS
CN Calcium bromide (CaBr2) (9CI) (CA INDEX NAME)

Br—Ca—Br

RN 7789-48-2 HCAPLUS
CN Magnesium bromide (MgBr2) (9CI) (CA INDEX NAME)

Br—Mg—Br

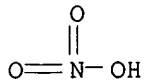
RN 7789-75-5 HCAPLUS
CN Calcium fluoride (CaF2) (9CI) (CA INDEX NAME)

F—Ca—F

RN 10043-52-4 HCAPLUS
CN Calcium chloride (CaCl2) (9CI) (CA INDEX NAME)

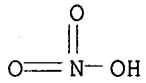
Cl—Ca—Cl

RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

IT **12167-74-7, Calcium hydroxide phosphate (Ca5(OH)(PO4)3)**
303955-02-4, Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(**PO4**)6)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(method for the calcn. of ion exchange properties of **hydroxy**- and fluoroapatites in aq. solns. of various cationic and anionic compns.)
RN 12167-74-7 HCAPLUS
CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 303955-02-4 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9	7440-70-2
Mg	1	7439-95-4

L108 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:658827 HCAPLUS
DN 136:330502
TI Precipitation of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's solution
AU Kuwahara, Hideyuki; Al-Abdullat, Yousef; Mazaki, Naoko; Tsutsumi, Sadami; Aizawa, Tatsuhiko

CS Research Institute for Applied Sciences, Kyoto, 606-8202, Japan
SO Materials Transactions (2001), 42(7), 1317-1321
CODEN: MTARCE; ISSN: 1345-9678
PB Japan Institute of Metals
DT Journal
LA English
CC 63-7 (Pharmaceuticals)
AB A new artificial bone concept by **magnesium** alloys is proposed to think much importance on its homogenization with a surrounding natural hard and soft tissue. **Magnesium** is an essential element for human body, so that **magnesium** bone implants can be expected to be toxicity free even though **magnesium** dissolved into human soft tissue. In addn., **magnesium** base artificial bone has vivo-adaptively to growing bone cells once vivo-coating is formed on the surface of **magnesium** in the inside of soft tissue. In the present paper, its chem. behavior in Hank's soln. (HBSS (+)) is described to simulate biochem. reactions of **magnesium** in the human body. An effect of heat treatment of **magnesium** on its chem. behavior is also investigated. Specimens of 10.times.20 .times. 2 mm3 were used for examg. chem. behaviors of com. grade pure **magnesium** (3N-**Mg**) in a HBSS (+) for various holding time (25-700 h). Specific mass gain of each specimen was measured, the surface microstructure was obsd. by a scanning electron microscope, identification of reaction products were examd. by x-ray diffraction measurements. Chem. compns. of reaction products were also analyzed by an energy dispersion x-ray spectrometry. Mass change of heat-treated 3N-**Mg**, which was heat-treated at 803 K for 90 ks increased with immersing time in HBSS (+) though that of other heat-treated 3N-**Mg** unstably decreased in HBSS (+). **Magnesium** reacted with HBSS (+) and then a **magnesium apatite** was pptd. on the heat-treated 3N-**Mg** specimen surface. The **magnesium apatite** should be described as (Ca0.86Mg0.14)10(**PO4**)6(**OH**)2.
ST **magnesium apatite** bone implant
IT Bone
(artificial; pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
IT Prosthetic materials and Prosthetics
(implants; pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
IT Heat treatment
(pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
IT **Apatite**-group minerals
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
IT **7439-95-4, Magnesium**, biological studies
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
IT **412319-78-9, Calcium magnesium** hydroxide **phosphate** (Ca4.3Mg0.7(**OH**)(**PO4**)3)
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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IT **7439-95-4**, **Magnesium**, biological studies
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

IT **412319-78-9**, **Calcium magnesium** hydroxide **phosphate** (Ca4.3Mg0.7(**OH**)(**PO4**)3)
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
RN 412319-78-9 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca4.3Mg0.7(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4.3	7440-70-2
Mg	0.7	7439-95-4

L108 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:621137 HCAPLUS
DN 136:8516
TI Synthesis of **Ca-Mg apatite** via a mechanochemical hydrothermal process
AU Liao, Jiefan; Hamada, Kenji; Senna, Mamoru
CS Nara Machinery Co., Ltd., Tokyo, 143-0002, Japan
SO Journal of Materials Synthesis and Processing (2000), 8(5/6), 305-311
CODEN: JMSPEI; ISSN: 1064-7562
PB Kluwer Academic/Plenum Publishers
DT Journal
LA English
CC 49-4 (Industrial Inorganic Chemicals)
Section cross-reference(s): 63
AB Mixts. of **calcium** and **magnesium hydroxides** and **calcium** dihydrogen **phosphate** in various molar

ratios were ground in water with a fine grinding machine, which features multi-ring grinding media. Mechanochem. amorphization of the mixts. occurs quickly by grinding. The mixts., after grinding for 5, 20, and 60 min, were then subjected to hydrothermal treatment at 573 K for 24 h. The influence of **Mg**/(**Mg** + **Ca**) molar ratio on the thermal behavior of the mech. activated powders and the structure of the final products has been investigated. The microhomogeneity of **Mg**, **Ca**, and P elements on the samples is enhanced by the mechanochem. treatment. A shift in the x-ray diffraction peaks was obsd. among the final products with different grinding times, presumably due to a partial substitution of **calcium** by **magnesium**.

ST **calcium magnesium apatite** synthesis
mechanochem hydrothermal process

IT **1305-62-0, Calcium hydroxide**, processes
1306-06-5D, Hydroxylapatite, magnesium-contg.
1309-42-8, Magnesium hydroxide
7758-23-8, Calcium dihydrogen **phosphate**
303955-04-6, Calcium magnesium hydroxide phosphate [Ca4Mg(**OH**)(**PO4**)3] **303955-05-7, Calcium magnesium hydroxide phosphate** [Ca5Mg5(**OH**)2(**PO4**)6] **374930-58-2, Calcium magnesium hydroxide phosphate** (Ca1.5Mg3.5(**OH**)(**PO4**)3)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(synthesis of **calcium magnesium apatite** by mechanochem. hydrothermal process)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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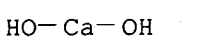
IT **1305-62-0, Calcium hydroxide**, processes
1306-06-5D, Hydroxylapatite, magnesium-contg.
1309-42-8, Magnesium hydroxide
7758-23-8, Calcium dihydrogen **phosphate**
303955-04-6, Calcium magnesium hydroxide phosphate [Ca4Mg(**OH**)(**PO4**)3] **303955-05-7, Calcium magnesium hydroxide phosphate** [Ca5Mg5(**OH**)2(**PO4**)6] **374930-58-2, Calcium magnesium hydroxide phosphate** (Ca1.5Mg3.5(**OH**)(**PO4**)3)

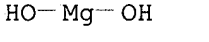
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(synthesis of **calcium magnesium apatite**
by mechanochem. hydrothermal process)
RN 1305-62-0 HCAPLUS
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



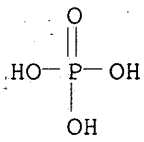
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 1309-42-8 HCAPLUS
CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)



RN 7758-23-8 HCAPLUS
CN Phosphoric acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 303955-04-6 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4	7440-70-2
Mg	1	7439-95-4

RN 303955-05-7 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2

Ca	5	7440-70-2
Mg	5	7439-95-4

RN 374930-58-2 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca1.5Mg3.5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	1.5	7440-70-2
Mg	3.5	7439-95-4

L108 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2000:641080 HCAPLUS
DN 133:338788
TI Characterization of the **magnesium**-substituted **hydroxyapatite** prepared by ultrasonic spray-pyrolysis technique
AU Hanazawa, Takashi; Aizawa, Mamoru; Howell, F. Scott; Itatani, Kiyoshi
CS Department of Chemistry, Faculty of Science and Engineering, Sophia University, Tokyo, 102-8554, Japan
SO Phosphorus Research Bulletin (1999), 9, 5-10
CODEN: PREBE7; ISSN: 0918-4783
PB Japanese Association of Inorganic Phosphorus Chemistry
DT Journal
LA English
CC 57-2 (Ceramics)
Section cross-reference(s): 63
AB **Magnesium**-substituted **hydroxyapatite** (**Mg**-HAp) powders with formula, Ca10-xMgx(**PO4**)6(**OH**)2, where x = 0, 0.25, 0.5, 0.75, 1, 1.5, 2, 5 and 10, were prepd. by spray-pyrolyzing aq. solns. in the **Ca**(**NO3**)2-**Mg**(**NO3**)2-(NH4)2HPO4-HNO3 system. Although only the **hydroxyapatite** (HAp) was present in the case of x = 0, .beta.-**tricalcium phosphate** (.beta.-TCP) formed with increasing x value. Only .beta.-TCP was present in the case of x = 1.5; however, it was gradually changed into the amorphous phase with a further increase in x value. The data on lattice consts. of the HAp and/or .beta.-TCP in the range of x = 0 to 1 showed that the Mg2+ ions could be substituted with the Ca2+ ions in HAp; the max. substituted amt. was estd. to be .apprx.7.7 mol%.
ST **magnesium** substituted **hydroxyapatite** prepn ultrasonic spray pyrolysis
IT Powders
Powders
(ceramic, **magnesium**-substituted **hydroxyapatite**; characterization of **magnesium**-substituted **hydroxyapatite** prepd. by ultrasonic spray-pyrolysis technique)
IT Ceramics
Ceramics
(powders, **magnesium**-substituted **hydroxyapatite**; characterization of **magnesium**-substituted **hydroxyapatite** prepd. by ultrasonic spray-pyrolysis technique)
IT Calcination
(spray, ultrasonic; characterization of **magnesium**-substituted **hydroxyapatite** prepd. by ultrasonic spray-pyrolysis technique)
IT **303954-99-6P, Calcium magnesium hydroxide phosphate** (Ca9.75Mg0.25(**OH**)2(**PO4**)6) **303955-00-2P, Calcium magnesium hydroxide phosphate** (Ca9.5Mg0.5(**OH**)2(

PO4)6) 303955-01-3P, Calcium magnesium hydroxide phosphate (Ca9.25Mg0.75(OH)2(PO4)6) 303955-02-4P, Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) 303955-03-5P, Calcium magnesium hydroxide phosphate (Ca8.5Mg1.5(OH)2(PO4)6) 303955-04-6P, Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) 303955-05-7P, Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(characterization of magnesium-substituted hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

IT 11089-13-7P, Magnesium hydroxide phosphate (Mg10(OH)2(PO4)6)
RL: SPN (Synthetic preparation); PREP (Preparation)
(characterization of magnesium-substituted hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

IT 12167-74-7P, Calcium hydroxide phosphate (Ca10(OH)2(PO4)6)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(hydroxyapatite phase; characterization of magnesium-substituted hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

IT 7758-87-4, .beta.-Tricalcium phosphate
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(.beta.-phase; characterization of magnesium-substituted hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Aizawa, M; J Ceram Soc 1996, V104, P126 HCAPLUS
(2) Aizawa, M; J Mater Sci in press 1999
(3) Aizawa, M; Phosphorus Res Bull 1996, V6, P217 HCAPLUS
(4) Bigi, A; Acta Cryst 1996, VB52, P87 HCAPLUS
(5) Messing, G; J Am Ceram Soc 1993, V76, P2707 HCAPLUS
(6) Saito, T; Inorg Mater 1998, V5, P377 HCAPLUS

IT 303954-99-6P, Calcium magnesium hydroxide phosphate (Ca9.75Mg0.25(OH)2(PO4)6) 303955-00-2P, Calcium magnesium hydroxide phosphate (Ca9.5Mg0.5(OH)2(PO4)6) 303955-01-3P, Calcium magnesium hydroxide phosphate (Ca9.25Mg0.75(OH)2(PO4)6) 303955-02-4P, Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) 303955-03-5P, Calcium magnesium hydroxide phosphate (Ca8.5Mg1.5(OH)2(PO4)6) 303955-04-6P, Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) 303955-05-7P, Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(characterization of magnesium-substituted hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

RN 303954-99-6 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.75Mg0.25(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9

O4P	6	14265-44-2
Ca	9.75	7440-70-2
Mg	0.25	7439-95-4

RN 303955-00-2 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.5Mg0.5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.5	7440-70-2
Mg	0.5	7439-95-4

RN 303955-01-3 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.25Mg0.75(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.25	7440-70-2
Mg	0.75	7439-95-4

RN 303955-02-4 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9	7440-70-2
Mg	1	7439-95-4

RN 303955-03-5 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca8.5Mg1.5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	8.5	7440-70-2
Mg	1.5	7439-95-4

RN 303955-04-6 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4	7440-70-2
Mg	1	7439-95-4

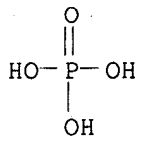
RN 303955-05-7 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	5	7440-70-2
Mg	5	7439-95-4

IT **12167-74-7P, Calcium hydroxide phosphate** (Ca10(**OH**)2(**PO4**)6)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**hydroxyapatite** phase; characterization of **magnesium** -substituted **hydroxyapatite** prepd. by ultrasonic spray-pyrolysis technique)
RN 12167-74-7 HCAPLUS
CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT **7758-87-4**, .beta.-**Tricalcium phosphate**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(.beta.-phase; characterization of **magnesium**-substituted **hydroxyapatite** prepd. by ultrasonic spray-pyrolysis technique)
RN 7758-87-4 HCAPLUS
CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

L108 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN **1999:685665** HCAPLUS
DN **132:43983**
TI Preparation of spherical **apatite** particles by the homogeneous precipitation method in the presence of **magnesium** ions and their ion-exchange properties
AU Aizawa, M.; Terado, T.; Howell, F. S.; Itatani, K.
CS Chiyoda-ku, 7-1 Kioi-cho, Faculty of Science and Engineering, Department of Chemistry, Sophia University, Tokyo, Japan
SO Materials Research Bulletin (1999), 34(8), 1215-1225
CODEN: MRBUAC; ISSN: 0025-5408
PB Elsevier Science Inc.
DT Journal

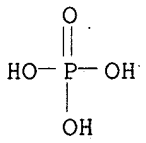
LA English
CC 78-4 (Inorganic Chemicals and Reactions)
AB Spherical **apatite** particles were prepd. by the homogeneous pptn. method in the presence of **Mg** ions. The starting solns. were prepd. by mixing 0.167 mol L-1 of **Ca**(**NO3**)2, 0.100 mol L-1 of (NH4)2HPO4, 1.00 mol L-1 of (NH2)2CO, 0.10 mol L-1 of HNO3, and a small amt. of **Mg**(**NO3**)2. The **carbonate** -contg. **apatite** powders were obtained by heating these solns. at 80-95.degree. for 48-192 h. Although fibrous particles with long-axis lengths of 30 to 60 .mu.m were obtained from the **Mg**-free soln., spherical agglomerates with diams. of .apprx.10 .mu.m, which contained minute plate-like particles, were present in the **apatite** powders derived from the solns. with 5% of **Mg** ions. The ion-exchange test for the harmful ions (Pb2+, Cd2+, and Ni2+) showed that the ion-exchange abilities of the **apatite** powders contg. **Mg** ions were much better than the ability of the **Mg**-free **apatite** powder. The ion-exchanged amts. of the **apatite** powder contg. **Mg** ions were arranged in the following order: Pb2+ >> Cd2+ > Ni2+.
ST **calcium carbonate** hydroxide **phosphate** **apatite** prepn cation exchange; lead cation exchange **calcium carbonate** hydroxide **phosphate** **apatite**; nickel cation exchange **calcium carbonate** hydroxide **phosphate apatite**; cadmium cation exchange **calcium carbonate** hydroxide **phosphate apatite**
IT Cation exchange
(of **calcium carbonate** hydroxide **phosphate** spherical **apatite** particles with divalent metal ions)
IT 7439-92-1, Lead, processes 7440-02-0, Nickel, processes 7440-43-9, Cadmium, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(cation exchange with spherical **calcium carbonate** hydroxide **phosphate apatite** particles)
IT 12207-55-5, Lead hydroxide **phosphate** (Pb5(**OH**)(**PO4**)3)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation from **calcium carbonate** hydroxide **phosphate** cation exchange with lead ions)
IT **12167-74-7P**, **Calcium** hydroxide **phosphate** (**Ca5**(**OH**)(**PO4**)**3**)
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. in presence of **magnesium** ions)
IT 52110-76-6P, **Calcium carbonate** hydroxide **phosphate**
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn. spherical **apatite** particles in presence of **magnesium** ions and cation exchange properties)
IT 57-13-6, Urea, reactions 7697-37-2, Nitric acid, reactions **7783-28-0** **10124-37-5**, **Calcium nitrate** (**Ca**(**NO3**)2) **10377-60-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for prepn. of **calcium carbonate** hydroxide **phosphate**)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aizawa, M; Inorg Mater 1998, V5, P387 HCAPLUS
(2) Fowler, B; Arch Oral Biol 1966, V11, P477 HCAPLUS
(3) Hench, L; J Am Ceram Soc 1991, V74, P1487 HCAPLUS
(4) Kawasaki, T; J Chromatogr 1991, V544, P147 HCAPLUS
(5) Kinoshita, M; Gypsum Lime 1990, V227, P19
(6) Monma, H; Gypsum Lime 1987, V210, P287 HCAPLUS

(7) Monma, H; J Catal 1982, V75, P200 HCAPLUS
(8) Suzuki, T; Gypsum Lime 1986, V204, P58
(9) Suzuki, T; J Chem Soc Faraday Trans 1 1981, V77, P1059 HCAPLUS
(10) Suzuki, T; J Chem Soc Faraday Trans 1 1982, V78, P3605 HCAPLUS
(11) Suzuki, T; J Chem Soc Faraday Trans 1 1984, V80, P3157 HCAPLUS
(12) Wilson, J; An Introduction to Bioceramics 1993, V1, P139
(13) Yamashita, K; Inorg Mater 1995, V2, P166 HCAPLUS

IT **12167-74-7P, Calcium** hydroxide **phosphate** (**Ca5(OH)(PO4)3**)
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. in presence of **magnesium** ions)
RN 12167-74-7 HCAPLUS
CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)

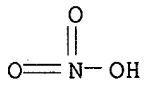
Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT **7783-28-0 10124-37-5, Calcium nitrate** (**Ca(NO3)2**) **10377-60-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for prepn. of **calcium carbonate** hydroxide **phosphate**)
RN 7783-28-0 HCAPLUS
CN Phosphoric acid, diammonium salt (8CI, 9CI) (CA INDEX NAME)



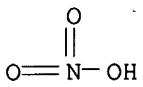
2 NH_3

RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

L108 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:18482 HCAPLUS
DN 130:147770
TI Synthesis of **magnesium**-containing **hydroxyapatite** and fluoroapatite by oxidative decomposition of a **calcium** chelate
AU Saito, Tomoki; Hashimoto, Kazuaki; Toda, Yoshitomo; Udagawa, Shigekazu; Kanazawa, Takafumi
CS Cent. Res. Dev. Cent., Sangi Co. Ltd., Saitama, 344-0001, Japan
SO Muki Materiaru (1998), 5(276), 377-386
CODEN: MUMAFX; ISSN: 1340-7899
PB Sekko Sekkai Gakkai
DT Journal
LA Japanese
CC 78-4 (Inorganic Chemicals and Reactions)
AB The effects of Mg2+ on morphol. and chem. compn. of **hydroxyapatite** (HAp) were investigated by the use of oxidative decompn. of **calcium** chelate (**Ca**-EDTA). A reaction system with no Mg2+ gave a **Ca**-deficient **CO3**-contg. **apatite** ppt. (**Ca**/P molar ratio = 1.46) which had a Japanese bladder cherry-like form (a polyhedron crystal based on a hexagon). As Mg2+ was added to the system the crystallinity decreased and a spherical ppt. formed. At **Mg**/(**Ca**+**Mg**) > 0.25 **Mg** -contg. whitlockite was produced. A Mg2+ adsorption 8% on the crystal surface was obsd. and the substitution limit of Mg2+ in the HAp structure was 10 mol%. Reaction systems are also given where some of the HAp is replaced with fluoroapatite.
ST **hydroxyapatite** prepn **calcium** chelate decompn; fluoroapatite prepn **calcium** chelate decompn; whitlockite prepn **calcium** chelate decompn
IT Crystal structure types
(**apatite**; synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** chelate)
IT **119029-00-4P**, **Calcium magnesium** hydroxide **phosphate** 220076-89-1P, **Calcium magnesium** fluoride **phosphate**
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** EDTA chelate)
IT 64-02-8, Tetrasodium edta **7558-79-4**, Disodium **phosphate** 7681-49-4, Sodium fluoride, reactions **10124-37-5**, **Calcium nitrate 10377-60-3**, **Magnesium nitrate**
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** chelate)
IT 62-33-9P, **Monocalcium** disodium edta
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** chelate)
IT 25618-23-9P, **Calcium magnesium phosphate**
RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** chelate)

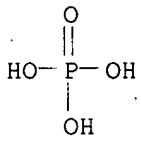
IT **119029-00-4P, Calcium magnesium** hydroxide **phosphate**
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** EDTA chelate)

RN 119029-00-4 HCAPLUS
CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

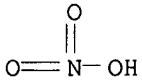
IT **7558-79-4**, Disodium **phosphate 10124-37-5, Calcium nitrate 10377-60-3, Magnesium nitrate**
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of **magnesium**-contg. **apatites** by oxidative decompn. of a **calcium** chelate)

RN 7558-79-4 HCAPLUS
CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)



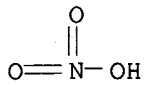
2 Na

RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

L108 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:599930 HCAPLUS
DN 129:249236
TI Hydraulically hardened materials and their preparation
IN Owada, Hitoshi; Okada, Yoshihiko
PA Onoda Cement Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B028-34
ICS C01B025-32; C01B033-20
CC 58-1 (Cement, Concrete, and Related Building Materials)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10245257	A2	19980914	JP 1997-62217	19970228

AB The hardened materials mainly contain **Ca phosphate** and .gtoreq.1 compds. selected from Si oxide and silicic acid (salts), whereas **Ca phosphate** grains are surrounded by the Si compds. Compds. and/or solid solns. mainly contg. **Ca** and phosphoric acid are successively or simultaneously mixed and kneaded with acids and solns. mainly contg. colloidal Si oxide and/or silicic acid (salts), and allowed to harden to give the claimed hardened materials. The hardened materials show high resistance to hard water and stable hardness.

ST **calcium phosphate** hydraulic compn silicon compd; silica hydraulic compn **calcium phosphate**; silicic acid hydraulic compn **calcium phosphate**

IT Aerosols
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)

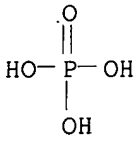
IT Cement (construction material)
(prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)

IT 79-10-7, Acrylic acid, uses 7697-37-2, Nitric acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)

IT 1343-98-2, Silicic acid 1344-09-8, Sodium silicate **7757-93-9, Dicalcium phosphate**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)

IT **1306-06-5, Hydroxyapatite 1306-06-5D, Hydroxyapatite**, solid solns. 7631-86-9, Colloidal silica, processes **7758-87-4, Tricalcium phosphate 7758-87-4D, Tricalcium phosphate**, solid solns. 33636-14-5 **137524-23-3**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)

IT **7757-93-9, Dicalcium phosphate**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)
RN 7757-93-9 HCAPLUS
CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Ca

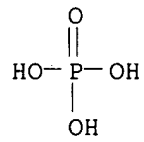
IT **1306-06-5, Hydroxyapatite 1306-06-5D, Hydroxyapatite**, solid solns. **7758-87-4, Tricalcium phosphate 7758-87-4D, Tricalcium phosphate**, solid solns. **137524-23-3**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

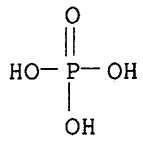
RN 7758-87-4 HCAPLUS
CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

RN 7758-87-4 HCAPLUS

CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)

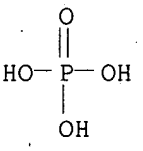


3/2 Ca

RN 137524-23-3 HCAPLUS
CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

CM 1

CRN 10043-83-1
CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5
CMF Ca . H O . O4 P
CCI MNS, TIS
CDES 8:IN,MN,HYDROXYLAPATITE

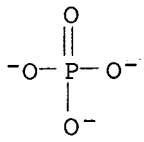
CM 3

CRN 14280-30-9
CMF H O

OH^-

CM 4

CRN 14265-44-2
CMF O4 P



CM 5

CRN 7440-70-2
CMF Ca

Ca

L108 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:518709 HCAPLUS
DN 127:195382
TI Effects of **magnesium** on the formation of **calcium** -deficient **hydroxyapatite** from CaHPO4.cntdot.2H2O and Ca4(**PO4**)2O
AU **TenHuisen, Kevor S.**; Brown, Paul W.
CS Mater. Res. Lab., Pennsylvania State Univ., University Park, PA, 16802, USA
SO Journal of Biomedical Materials Research (1997), 36(3), 306-314
CODEN: JBMRBG; ISSN: 0021-9304
PB Wiley
DT Journal
LA English
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 78
AB **Calcium**-deficient **hydroxyapatite** (HA) with a **Ca**/P molar ratio of 1.50 was synthesized in various concns. (0.01-75 mM) of MgCl2 at 37.4.degree.C by reaction between particulate CaHPO4.cntdot.2H2O and Ca4(**PO4**)2O. The effects of **magnesium** on the kinetics of HA formation were detd. using isothermal calorimetry. All reactions completely consumed the precursor phases as indicated by X-ray diffraction anal. and a const. enthalpy of reaction (240 kJ/mol). **Magnesium** concns. below 1 mM had no effect on the kinetics of HA formation. **Magnesium** concns. between 1 and 2.5 mM affected the reaction path but did not affect the time required for complete reaction. Higher concns. extended the times of complete reaction due to **magnesium** adsorption on the precursor phase(s) and HA nuclei, and stabilization of a noncryst. **calcium phosphate** (NCP). HA formation in the presence of **magnesium** resulted in sepn. of the following two events: initial formation of HA nuclei and NCP, and consumption of CaHPO4.cntdot.2H2O. This was indicated by the appearance of an addnl. calorimetric peak. Variations in **calcium**, **magnesium**, and **phosphate** concns. and pH with time were detd. Increasing the **magnesium** concn. resulted in elevated **calcium** concns. After an initial decrease in **magnesium** owing to its adsorption onto HA nuclei and precursor(s), a period of slow reaction at const. **magnesium** concn. was obsd. Both the **magnesium** concn. in soln. and the proportions of precursors present decreased prior to any evidence of a cryst. product phase. This is attributed to the formation of NCP capable of incorporating **magnesium**. This noncryst. phase persisted for more than 1 yr for reactions in **magnesium** concns. about 2.5 mM. Its conversion to HA resulted in the release of

magnesium to the soln.
ST **magnesium hydroxyapatite calcium phosphate** cement
IT **1306-06-5P, Hydroxyapatite**
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
IT 1306-01-0, **TetraCalcium phosphate** 7786-30-3, **Magnesium** chloride, reactions 7789-77-7, **DiCalcium phosphate** dihydrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
IT **1306-06-5P, Hydroxyapatite**
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT **7786-30-3, Magnesium** chloride, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
RN 7786-30-3 HCAPLUS
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)

Cl—Mg—Cl

L108 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN **1997:352867** HCAPLUS
DN **127:79068**
TI The effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C
AU Martin, R. I.; Brown, P. W.
CS Materials Research Laboratory, Penn State University, University Park, PA, 16802, USA
SO Calcified Tissue International (1997), 60(6), 538-546
CODEN: CTINDZ; ISSN: 0171-967X
PB Springer
DT Journal
LA English
CC 13-2 (Mammalian Biochemistry)
Section cross-reference(s): 67
AB The effects of **magnesium** ion on the formation of **calcium** -deficient **hydroxyapatite** [Ca9HPO4(**PO4**)5OH, CDHAp] from CaHPO4 and Ca4(**PO4**)2O dissoln. were investigated using two **magnesium** sources: Mg3(**PO4**)2 (chem. system 1) or MgCl2.cntdot.H2O (chem. system 2) solns. Because chloroapatite does not

form from aq. solns., the use of two **magnesium** sources facilitated the detn. of **magnesium**'s role during synthetic **hydroxyapatite** formation in vitro and possible related effects during biomineralization. Isothermal calorimetry detd. the progress of reactions. Two peaks are obsd. as heat is evolved during the formation of CDHAp in water at 37.4.degree.C. The nucleation and growth of CDHAp are the corresponding mechanisms. Although the time for complete reaction and total heat-of-reaction .DELTA.Hr remain const., the height of the first peak is reduced as the concn. of **magnesium** ion approaches 4 mM in either chem. system. **Magnesium** does not substitute into CDHAp even though there are **calcium** vacancies available. Subsequent increases cause the remaining heat peak to broaden and the time required for complete reaction to approach 24 h as the initial MgCl2 concn. reaches 100 mM. Supersatn. limits chem. system 1 to Mg3(**PO4**)2 concns. below 10 mM. A MgCl2 concn. of 3.16 M precludes CDHAp from forming for over 3 mo; rather newberyite, MgHPO4 .cntdot. 3H2O, ppts. The morphol. and surface are of the CDHAp formed in 100 mM MgCl2 soln. are comparable to those of CDHAp formed in water. The surface areas are approx. 80 m2/g. **Magnesium** concns. below 4 mM only inhibit nucleation whereas those above 4 mM inhibit growth as well. **Magnesium phosphate** complexes are more inhibitory than **magnesium** chloride complexes. Increasing the liq.-to-solids ratio or agitation significantly increases the induction period before reaction initiates. Increasing the liq.-to-solids ratio increases the time span for growth whereas increasing agitation decreases the time span for growth. The large inhibitory effect of agitation suggests quiescent systems are more suitable for detg. the kinetics of HAp formation. A **magnesium** inorg. chem. activity (.alpha.**Mg** = .gamma. **Mg**[Mg2+]) many times greater than that in biol. fluids is required before inhibition of **hydroxyapatite** formation is realized.

ST **magnesium hydroxyapatite** formation nucleation growth biomineralization

IT Calcification
Crystal growth
Crystal nucleation
(effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C)

IT 1306-01-0, **Calcium** oxide **phosphate** (Ca4O(**PO4**)2) **7439-95-4, Magnesium,** reactions **7757-87-1 7757-93-9 7786-30-3, Magnesium** chloride (MgCl2), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C)

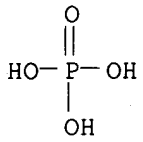
IT **1306-06-5P, Hydroxyapatite**
RL: SPN (Synthetic preparation); PREP (Preparation)
(effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C)

IT **7439-95-4, Magnesium,** reactions **7757-87-1 7757-93-9 7786-30-3, Magnesium** chloride (MgCl2), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C)

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

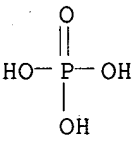
Mg

RN 7757-87-1 HCAPLUS
CN Phosphoric acid, magnesium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



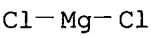
3/2 Mg

RN 7757-93-9 HCAPLUS
CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Ca

RN 7786-30-3 HCAPLUS
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)



IT **1306-06-5P, Hydroxyapatite**
RL: SPN (Synthetic preparation); PREP (Preparation)
(effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO4 and Ca4(**PO4**)2O at 37.4.degree.C)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

L108 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN **1997:244356** HCAPLUS
DN **126:229437**
TI Remineralizing products and methods for teeth
IN Winston, Anthony E.; Usen, Norman
PA Enamelon, Inc., USA
SO PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K007-16
ICS A61K007-18; A61K009-68; A61K033-24; B65D035-22
CC 62-7 (Essential Oils and Cosmetics)

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9706774	A1	19970227	WO 1996-US12456	19960802
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
	US 5603922	A	19970218	US 1995-512473	19950808
	US 5645853	A	19970708	US 1995-512286	19950808
	AU 9666829	A1	19970312	AU 1996-66829	19960802
	AU 712524	B2	19991111		
	EP 845976	A1	19980610	EP 1996-926802	19960802
	R: BE, DE, ES, FR, GB, IT, SE				
	JP 10511104	T2	19981027	JP 1996-509305	19960802
	BR 9610258	A	20000509	BR 1996-10258	19960802
PRAI	US 1995-512286	A	19950808		
	US 1995-512473	A	19950808		
	WO 1996-US12456	W	19960802		

AB Products and methods are provided for the remineralization of lesions formed in the subsurfaces of teeth and/or mineralization of tubules in exposed dentin of teeth, wherein the products generally contain .gtoreq.1 water-sol. **Ca** salt, .gtoreq.1 divalent metal salt other than **Ca** salt, .gtoreq.1 water-sol. **phosphate** salt, and, optionally, .gtoreq.1 water-sol. fluoride salt. The water-sol. salts are mixed to form an aq. mixed soln. having pH .apprx.4.5-7.0. Cations released by the divalent metal salt stabilize the aq. soln. such that PO43- and Ca2+ released by the salts do not react to any large extent until the product is introduced into the oral cavity and, upon introduction into the oral cavity, the ions do not rapidly ppt. This gives the cations and anions sufficient time to diffuse through the tooth surface to the lesion(s) and/or tubules where the ions form a ppt., thereby remineralizing the lesion(s) and/or mineralizing the tubule(s). Thus, a 2-part remineralizing mouthwash contained (A) H2O 73.8, glycerin 20.0, **Ca**(**NO3**)2.4H2O 4.5, MgCl2.6H2O, flavoring 0.4, and saccharin 0.1 wt.% and (B) H2O 75.9, glycerin 20.0, K2HPO4 0.5, KH2PO4 3.0, NaF 0.1, flavoring 0.4, and saccharin 0.1 wt.%; the parts were combined just before use.

ST tooth remineralization **calcium phosphate** fluoride; mineralization tooth mouthwash dentifrice

IT Tooth
(dentin; remineralizing products and methods for teeth)

IT Drug delivery systems
(dragees; remineralizing products and methods for teeth)

IT Dentifrices
(gels; remineralizing products and methods for teeth)

IT Drug delivery systems
(lozenges; remineralizing products and methods for teeth)

IT Salts, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(of divalent metals; remineralizing products and methods for teeth)

IT Candy
Chewing gum
Dentifrices
Food
Mouthwashes
Tooth
(remineralizing products and methods for teeth)

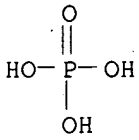
IT Fluorides, biological studies
Phosphates, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remineralizing products and methods for teeth)
IT Drug delivery systems
(solns.; remineralizing products and methods for teeth)
IT Drug delivery systems
(tablets; remineralizing products and methods for teeth)
IT 62-54-4, **Calcium** acetate 142-72-3, **Magnesium** acetate
299-28-5, **Calcium** gluconate 543-94-2, Strontium acetate
557-34-6, Zinc acetate 814-80-2, **Calcium** lactate
1309-48-4, **Magnesium** oxide, biological studies
7439-95-4D, **Magnesium**, salts, biological studies
7440-24-6D, Strontium, salts, biological studies 7440-31-5D, Tin, salts, biological studies 7440-66-6D, Zinc, salts, biological studies
7440-70-2D, **Calcium**, salts, biological studies **7558-79-4**
, Disodium **phosphate** **7558-80-7**, Monosodium
phosphate 7631-97-2 7646-85-7, Zinc chloride, biological studies 7681-49-4, Sodium fluoride, biological studies 7733-02-0, Zinc sulfate 7758-11-4, Dipotassium **phosphate** 7772-99-8, Stannous chloride, biological studies 7778-77-0, Monopotassium **phosphate**
7779-88-6, Zinc **nitrate** **7786-30-3**, **Magnesium**
chloride, biological studies 10042-76-9, Strontium **nitrate**
10043-52-4, **Calcium** chloride, biological studies
10124-37-5, **Calcium** **nitrate** 10476-85-4,
Strontium chloride
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remineralizing products and methods for teeth)
IT **1306-06-5P**, **Hydroxylapatite**
RL: PNU (Preparation, unclassified); PREP (Preparation)
(remineralizing products and methods for teeth)
IT **1309-48-4**, **Magnesium** oxide, biological studies
7439-95-4D, **Magnesium**, salts, biological studies
7558-79-4, Disodium **phosphate** **7558-80-7**,
Monosodium **phosphate** **7786-30-3**, **Magnesium**
chloride, biological studies **10043-52-4**, **Calcium**
chloride, biological studies **10124-37-5**, **Calcium**
nitrate
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remineralizing products and methods for teeth)
RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

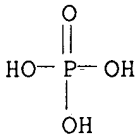
Mg

RN 7558-79-4 HCAPLUS
CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)



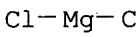
2 Na

RN 7558-80-7 HCAPLUS
CN Phosphoric acid, monosodium salt (8CI, 9CI) (CA INDEX NAME)

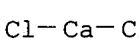


Na

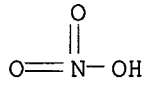
RN 7786-30-3 HCAPLUS
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)



RN 10043-52-4 HCAPLUS
CN Calcium chloride (CaCl2) (9CI) (CA INDEX NAME)



RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

IT **1306-06-5P, Hydroxylapatite**
RL: PNU (Preparation, unclassified); PREP (Preparation)
(remineralizing products and methods for teeth)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

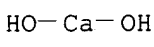
Component	Ratio	Component Registry Number

HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

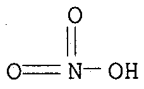
L108 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1996:514017 HCAPLUS
DN 125:204451
TI Preparation and characterization of **magnesium-calcium hydroxyapatites**
AU Yasukawa, Akemi; Ouchi, Satoshi; Kandori, Kazuhiko; Ishikawa, Tatsuo
CS Sch. Chem., Osaka Univ. Educ., Kashiwara, 582, Japan
SO Journal of Materials Chemistry (1996), 6(8), 1401-1405
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 13
AB **Magnesium-calcium hydroxyapatite** (MgCaHAP) solid solns. have been prepd. by a wet method from aq. solns. with different molar ratios, **Mg**/(**Mg** + **Ca**), ranging from 0 to 0.5. The MgCaHAP particles formed were characterized by XRD, FTIR, TEM, ICP, TG-DTA and gas adsorption techniques. The **Mg**/(**Mg** + **Ca**) ratios of the formed MgCaHAP particles were less than those of the tarting solns. With increasing **Mg** content, the particles became less cryst. and agglomerates of the fine crystals and finally the products were amorphous at **Mg**/(**Mg** + **Ca**) > 0.31. The amt. of irreversible adsorption of CO2 and CH3OH showed a min. at a molar ratio (**Mg** + **Ca**)/P of **ca**. 1.56, less than the stoichiometric ratio of 1.67.
ST **magnesium calcium hydroxyapatite** prepn
IT Adsorption
(prepn. and characterization of **magnesium-calcium hydroxyapatites**)
IT 67-56-1, Methanol, properties 124-38-9, Carbon dioxide, properties
RL: PRP (Properties)
(adsorption of; prepn. and characterization of **magnesium-calcium hydroxyapatites**)
IT **127836-54-8P, Calcium magnesium hydroxide phosphate** ((**Ca**,**Mg**)5(**OH**)(**PO4**)3)
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and characterization of **magnesium-calcium hydroxyapatites**)
IT **1305-62-0, Calcium hydroxide**, reactions
7664-38-2, Phosphoric acid, reactions **10377-60-3, Magnesium nitrate**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and characterization of **magnesium-calcium hydroxyapatites**)
IT **127836-54-8P, Calcium magnesium hydroxide phosphate** ((**Ca**,**Mg**)5(**OH**)(**PO4**)3)
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and characterization of **magnesium-calcium hydroxyapatites**)
RN 127836-54-8 HCAPLUS
CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

IT **1305-62-0, Calcium hydroxide**, reactions
10377-60-3, Magnesium nitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and characterization of **magnesium-calcium hydroxyapatites**)
RN 1305-62-0 HCAPLUS
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



RN 10377-60-3 HCAPLUS
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

L108 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1996:145667 HCAPLUS
DN 124:216642
TI Rietveld structure refinements of **calcium hydroxylapatite** containing **magnesium**
AU Bigi, A.; Falini, G.; Foresti, E.; Gazzano, M.; Ripamonti, A.; Roveri, N.
CS Dip. Chim. 'G. Ciamician' Cent. Studio Fis. Macromolecole, Univ. Studi Bologna, Bologna, I-40126, Italy
SO Acta Crystallographica, Section B: Structural Science (1996), B52(1), 87-92
CODEN: ASBSDK; ISSN: 0108-7681
PB Munksgaard
DT Journal
LA English
CC 75-8 (Crystallography and Liquid Crystals)
AB The crystal structures of four **hydroxylapatite** (HA) samples prepd. from solns. in the presence of 10, 15, 25 and 30 **Mg** -atom-% were studied by x-ray powder pattern fitting. The total **Mg** content of the solid samples, as detd. by chem. anal., was 4.9, 14.1, 20.4 and 30.6 **Mg**-atom-%, resp. Rietveld anal. was performed using the computer program PREFIN implemented with routines which allow the refinements of the av. crystallite sizes. Different refinement procedures were carried out to evaluate the effect of the amorphous and background profiles on the occupancy factor data. For comparison, **Mg**-free **hydroxylapatite** was refined with the same strategies. The results of the different approaches indicate that the degree of **Mg** substitution for **Ca** in the Ha structure can be at most .apprx.10 atom-%. **Mg** substitutes **Ca** preferentially at the 6(h) site. The broadening of the

diffraction peaks increases on increasing the total **Mg** content in the solid phase, which is always significantly higher than the amt. incorporated into the HA structure. The excess is probably located in the amorphous phase and/or on the crystallite surface.

ST structure **calcium magnesium hydroxylapatite** crystal

IT Crystal structure
(of **magnesium**-substituted **calcium hydroxylapatite**)

IT **127836-54-8, Calcium magnesium** hydroxide **phosphate** ((**Ca,Mg**)5(**OH**)(**PO4**)3)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(Rietveld refinements of crystal structure of)

IT **127836-54-8, Calcium magnesium** hydroxide **phosphate** ((**Ca,Mg**)5(**OH**)(**PO4**)3)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(Rietveld refinements of crystal structure of)

RN 127836-54-8 HCAPLUS

CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

L108 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:663521 HCAPLUS

DN 115:263521

TI Manufacture of ceramics coated with **calcium phosphate** as artificial bones

IN Tsuzuki, Masaji; Miyata, Eiji; Hattori, Masaaki; Miura, Kazunori; Kondo, Kazuo

PA NGK Spark Plug Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B041-87
ICS A61L027-00

ICA C04B035-00

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 03137079	A2	19910611	JP 1989-272191	19891019
JP 07074109	B4	19950809		

AB A ceramic coated with **Ca phosphate** is prepd. for use in manufg. biocompatible artificial bone. A sintered ceramic is coated with a mixt. of **hydroxylapatite** and Ca3(**PO4**)2 (the wt. ratio from 4/1 to 1/5), or coated with a mixt. of **hydroxylapatite** and **Mg phosphate** (the wt. ratio 50/1 to 50/5).

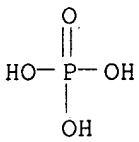
ST ceramic **calcium phosphate** artificial bone

IT Bone
(artificial, manuf. of, with ceramic materials coated with

hydroxylapatite and **tricalcium phosphate**)
IT Dental materials and appliances
Prosthetic materials and Prosthetics
(implants, manuf. of, with ceramic materials coated with **hydroxylapatite** and **tricalcium phosphate**)
IT 124097-42-3 **137524-23-3**
RL: BIOL (Biological study)
(ceramic coating with, in artificial bone manuf.)
IT **137524-23-3**
RL: BIOL (Biological study)
(ceramic coating with, in artificial bone manuf.)
RN 137524-23-3 HCAPLUS
CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

CM 1

CRN 10043-83-1
CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5
CMF Ca . H O . O4 P
CCI MNS, TIS
CDES 8:IN,MN,HYDROXYLAPATITE

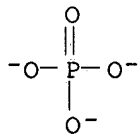
CM 3

CRN 14280-30-9
CMF H O

OH⁻

CM 4

CRN 14265-44-2
CMF O4 P



CM 5

CRN 7440-70-2
CMF Ca

Ca

L108 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1991:418782 HCAPLUS
DN 115:18782
TI **Magnesium**-uptake into **apatite** crystal
AU Okazaki, Masayuki; LeGeros, Racquel Z.
CS Fac. Dent., Osaka Univ., Osaka, 565, Japan
SO Maguneshumu (Kyoto) (1990), 9(1), 19-27
CODEN: MAGUEO; ISSN: 0913-4867
DT Journal
LA Japanese
CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 66
AB Synthetic **Mg**-contg. **hydroxyapatites** were incubated in 0.9% NaCl soln. and 0.1 M CH3COOK buffer soln. (pH 7.4) at 37.degree. to examine their crystallog. behavior in these solns. After 1 mo of incubation, the **Mg** content in the residual samples decreased greatly, esp., in samples with higher original **Mg** content. On the other hand, [**Mg**] in both solns. increased more than [**Ca**]. According to the decrease of **Mg** content in the residual samples, the a- and c-axis dimensions increased along the curves drawn for the original samples. This means that sol. **Mg** ions are readily released and that the **apatites** with lower **Mg** contents are recrystd. These results strongly suggest that Mg2+ ions can be substituted into the **apatite** crystals during synthesis. At higher **Mg** content, .beta.-TCP is formed.
ST **apatite** cation exchange **magnesium**; growth **magnesium hydroxyapatite** crystal
IT Crystal growth
(of **magnesium apatite** crystals in aq. solns.)
IT Cation exchange
(of **magnesium** by **apatite** crystals in aq. solns.)
IT **1306-06-5**, **Hydroxylapatite** (**Ca5**(**OH**)(**PO4**)**3**) 11089-13-7, **Magnesium** hydroxide **phosphate** (Mg5(**OH**)(**PO4**)3) **134382-55-1**, **Calcium magnesium** hydroxide **phosphate** (Ca9.09Mg0.91(**OH**)2(**PO4**)6) **134382-56-2**, **Calcium magnesium** hydroxide **phosphate** (Ca6.67Mg3.33(**OH**)2(**PO4**)6) **134382-90-4**, **Calcium magnesium** hydroxide **phosphate** (Ca9.9Mg0.1(**OH**)2(**PO4**)6) **134382-91-5**, **Calcium magnesium** hydroxide **phosphate** (Ca9.52Mg0.48(**OH**)2(**PO4**)6)
RL: PRP (Properties)
(cation exchange of crystals of, in aq. solns.)
IT **7439-95-4**, **Magnesium**, properties 7440-70-2, **Calcium**, properties
RL: PRP (Properties)
(cation exchange of, in **apatite** crystals in aq. soln.)
IT **1306-06-5**, **Hydroxylapatite** (**Ca5**(**OH**)(**PO4**)**3**) **134382-55-1**, **Calcium magnesium** hydroxide **phosphate** (Ca9.09Mg0.91(**OH**)2(**PO4**)6) **134382-56-2**, **Calcium**

magnesium hydroxide **phosphate** (Ca6.67Mg3.33(**OH**
)2(**PO4**)6) **134382-90-4, Calcium**
magnesium hydroxide **phosphate** (Ca9.9Mg0.1(**OH**
)2(**PO4**)6) **134382-91-5, Calcium**
magnesium hydroxide **phosphate** (Ca9.52Mg0.48(**OH**
)2(**PO4**)6)
RL: PRP (Properties)
(cation exchange of crystals of, in aq. solns.)

RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 134382-55-1 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.09Mg0.91(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.09	7440-70-2
Mg	0.91	7439-95-4

RN 134382-56-2 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca6.67Mg3.33(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	6.67	7440-70-2
Mg	3.33	7439-95-4

RN 134382-90-4 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.9Mg0.1(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.9	7440-70-2
Mg	0.1	7439-95-4

RN 134382-91-5 HCAPLUS
CN Calcium magnesium hydroxide phosphate (Ca9.52Mg0.48(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2

Ca	9.52	7440-70-2
Mg	0.48	7439-95-4

IT **7439-95-4, Magnesium**, properties
RL: PRP (Properties)
(cation exchange of, in **apatite** crystals in aq. soln.)
RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

L108 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1990:425614 HCAPLUS
DN 113:25614
TI Nontoxic anticorrosive molybdate pigment
IN Hajek, Bohumil; Srank, Zlatko; Charvat, Ivo; Trnka, Jiri; Jirakova, Dagmar; Palffy, Alexander; Svoboda, Miloslav
PA Czech.
SO Czech., 3 pp.
CODEN: CZXXA9
DT Patent
LA Czech
IC ICM C09C001-00
CC 42-6 (Coatings, Inks, and Related Products)
Section cross-reference(s): 49
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CS 262306	B1	19890314	CS 1985-3626	19850521

AB The title pigment for org. soln. and aq. dispersion varnishes has a high anticorrosion effect at a reduced content of Mo and consists of CaCO3, MgCO3, **Ca(Mg)CO3**, MgO, or ZnO carriers 75-94.5, Ca5(**OH**)(**PO4**)2, (**Mg, Ca**)5(**OH**)(**PO4**)3, and(or) Zn3(**PO4**)2 deposited on the carrier surface 5.0-20.0, and CaMoO4, MgMoO4, and(or) Zn5Mo2O11.5H2O 0.5-5.0%. Thus, aq. dispersion of 300 g CaCO3 was treated with 0.2 mol dild. H3PO4 and then with aq. soln. contg. 2.65 g (NH4)2MoO4.4H2O, filtered, washed, and dried giving the pigment contg. CaCO3 88.2, **Ca5(OH)(PO4)3** 10.9, and CaMoO4 0.9%.
ST nontoxic anticorrosive molybdate pigment
IT Pigments
(anticorrosive, molybdenum-based, on carriers, manuf. of)
IT **471-34-1, Calcium carbonate**, uses and miscellaneous **546-93-0, Magnesium carbonate** (MgCO3) **1309-48-4, Magnesium** oxide (MgO), uses and miscellaneous 1314-13-2, Zinc oxide, uses and miscellaneous 7000-29-5
RL: USES (Uses)
(carriers, for manuf. of nontoxic anticorrosive pigments for varnishes)
IT 7543-51-3 **12167-74-7, Calcium hydroxide phosphate (Ca5(OH)(PO4)3)** **127836-54-8, Calcium magnesium hydroxide phosphate** ((**Ca,Mg**)5(**OH**)(**PO4**)3)
RL: USES (Uses)
(in manuf. of nontoxic anticorrosive pigments for varnishes)
IT 7789-82-4, **Calcium** molybdate (CaMoO4) 13767-03-8, **Magnesium** molybdate (MgMoO4) 127814-40-8, Molybdenum zinc oxide (Mo2Zn5O11)
RL: USES (Uses)
(pigment contg., anticorrosive, nontoxic, manuf. of)

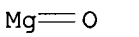
IT 13106-76-8
RL: USES (Uses)
(treatment by, of **magnesium** or **calcium** or zinc carrier, in manuf. of nontoxic anticorrosive pigments for varnishes)
IT **471-34-1, Calcium carbonate**, uses and miscellaneous **546-93-0, Magnesium carbonate** ($MgCO_3$) **1309-48-4, Magnesium** oxide (MgO), uses and miscellaneous
RL: USES (Uses)
(carriers, for manuf. of nontoxic anticorrosive pigments for varnishes)
RN 471-34-1 HCAPLUS
CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)

Ca

RN 546-93-0 HCAPLUS
CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)

Mg

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



IT **12167-74-7, Calcium hydroxide phosphate** ($Ca_5(OH)(PO_4)_3$) **127836-54-8, Calcium magnesium hydroxide phosphate** ($(Ca,Mg)_5(OH)(PO_4)_3$)
RL: USES (Uses)
(in manuf. of nontoxic anticorrosive pigments for varnishes)
RN 12167-74-7 HCAPLUS
CN Calcium hydroxide phosphate ($Ca_5(OH)(PO_4)_3$) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 127836-54-8 HCAPLUS
CN Calcium magnesium hydroxide phosphate ($(Ca,Mg)_5(OH)(PO_4)_3$) (9CI) (CA

INDEX NAME)

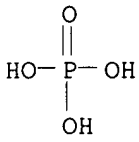
Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

L108 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN **1990:196892** HCAPLUS
DN **112:196892**
TI Preparation of **tricalcium phosphate** low in **hydroxyapatite**
IN Ackilli, Joseph A.; Saleeb, Fouad Z.; Morreale, Philip; McKay, Randal P.
PA General Foods Corp., USA
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C01B015-16
ICS C01B025-26
NCL 423308000
CC 17-6 (Food and Feed Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4891198	A	19900102	US 1986-894609	19860807
	CA 1328189	A1	19940405	CA 1987-542393	19870717
	IN 174328	A	19941105	IN 1989-DE472	19890530
	CN 1047661	A	19901212	CN 1989-103891	19890602
	CN 1020885	B	19930526		
PRAI	US 1986-894609	A	19860807		

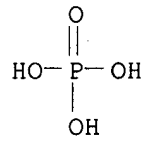
OS CASREACT 112:196892
AB Prepn. of **tricalcium phosphate** (I) by the addn. of a **Ca** base (e.g. **Ca**(**OH**)2) to an excess of H3PO4 under controlled temp. (40-80 .degree.F, preferably 50 .degree.F) and at an alk. pH (8-12, preferably 11-12) results in a prepn. of I with a greatly reduced **hydroxyapatite** content. Addn. of **Mg**(**OH**)2 to form **Mg phosphates** in the prepn. further reduces the content of **hydroxyapatite**. When this prepn. of I is used as an additive for acid beverages it is more rapidly sol. with a reduced insol. residue. A slurry of **Ca**(**OH**)2 222 g in water 800 mL was added to 2 mol of H3PO4 (231 g 85% H3PO4 in 1000 mL water) with continuous stirring. Temp. was maintained at .apprx.60 .degree.F by cooling in ice. The resulting slurry was spray-dried. When this prepn. was dissolved in a citric acid soln. a clear soln. resulted, indicating very little **hydroxyapatite** formation.
ST **tricalcium phosphate** low **hydroxyapatite** food additive; citric acid beverage sol **tricalcium phosphate**
IT Beverages
(citric acid contg., **hydroxyapatite**-low **tricalcium phosphate** sol. in, prepn. of)
IT 77-92-9P, Citric acid, biological studies
RL: PREP (Preparation)
(aq. solns. of, **hydroxyapatite**-low **tricalcium phosphate** sol. in, prepn. of)
IT **10043-83-1, Magnesium phosphate**
RL: BIOL (Biological study)
(as additive in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)

IT **7758-87-4P, Tricalcium phosphate**
RL: PREP (Preparation)
(prepn. of, **hydroxyapatite**-low, food additive sol. in acid beverages)
IT **1305-62-0, Calcium** hydroxide, reactions 7664-38-2, Phosphoric acid, reactions
RL: RCT (Reactant)
(reactions of, in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
IT **1306-06-5P, Hydroxylapatite (Ca5(OH)(PO4)3)**
RL: PREP (Preparation)
(**tricalcium phosphate** low in, prepn. of, as additive for citric acid-contg. beverages)
IT **10043-83-1, Magnesium phosphate**
RL: BIOL (Biological study)
(as additive in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
RN 10043-83-1 HCAPLUS
CN Phosphoric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



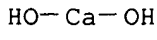
●x Mg

IT **7758-87-4P, Tricalcium phosphate**
RL: PREP (Preparation)
(prepn. of, **hydroxyapatite**-low, food additive sol. in acid beverages)
RN 7758-87-4 HCAPLUS
CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

IT **1305-62-0, Calcium** hydroxide, reactions
RL: RCT (Reactant)
(reactions of, in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
RN 1305-62-0 HCAPLUS
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



IT **1306-06-5P, Hydroxylapatite (Ca5(OH)(PO4)3)**
RL: PREP (Preparation)
(**tricalcium phosphate** low in, prepn. of, as additive for citric acid-contg. beverages)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

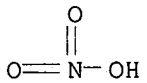
Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

L108 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1989:87299 HCAPLUS
DN 110:87299
TI Preparation of amorphous **calcium-magnesium phosphates** at pH 7 and characterization by x-ray absorption and Fourier transform infrared spectroscopy
AU Holt, C.; Van Kemenade, M. J. J. M.; Harries, J. E.; Nelson, L. S.; Bailey, R. T.; Hukins, D. W. L.; Hasnain, S. S.; De Bruyn, P. L.
CS Hannah Res. Inst., Ayr, KA6 5HL, UK
SO J. Cryst. Growth (1988), 92(1-2), 239-52
CODEN: JCRGAE; ISSN: 0022-0248
DT Journal
LA English
CC 78-5 (Inorganic Chemicals and Reactions)
AB Amorphous **Ca Mg phosphates** were prepd. by pptn. from moderately supersatd. aq. solns. at pH 7. Chem. anal. of the samples by ion chromatog. showed that .ltoreq.50% of the **phosphate** ions were protonated, the proportion increasing with the **Mg** to **Ca** ion activity ratio in the soln. When left in contact with the supernatant, the amorphous ppts. matured to form the cryst. CaHPO4.2H2O. The amorphous phases were characterized by x-ray absorption spectroscopy and by Fourier transform IR spectroscopy and their properties compared with those of a basic amorphous **tricalcium phosphate** pptd. at pH 10. The x-ray absorption spectra near the K edge of **Ca** were very similar for all samples but there were differences in the IR spectra between the basic and the more acidic salts. In the **phosphate** stretching region, the main band of the more acidic materials occurred at higher wavenumber and was broader. Also there was a broad band of medium intensity at .apprx.890 cm-1 whereas there was virtually no absorption band in this region in the spectrum of amorphous Ca3(**PO4**)2. The acidic amorphous **Ca phosphates** may be useful as model compds. in describing some complex biol. **Ca phosphates** that form near neutral pH.
ST **calcium magnesium phosphate** amorphous; EXAFS
calcium magnesium phosphate amorphous
IT X-ray spectra
(EXAFS, of amorphous **calcium magnesium phosphate**)
IT 25618-23-9P, **Calcium magnesium phosphate**
119029-00-4P, Calcium magnesium hydroxide **phosphate**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and EXAFS and IR spectra of amorphous)
IT 7778-77-0
RL: RCT (Reactant)
(reactions of, with **calcium nitrate** and **magnesium nitrate**)

IT **10377-60-3, Magnesium dinitrate**
RL: RCT (Reactant)
(reactions of, with potassium **phosphate** and **calcium nitrate**)
IT **10124-37-5, Calcium dinitrate**
RL: RCT (Reactant)
(reactions of, with potassium **phosphate** and **magnesium nitrate**)
IT **119029-00-4P, Calcium magnesium** hydroxide **phosphate**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and EXAFS and IR spectra of amorphous)
RN 119029-00-4 HCAPLUS
CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)

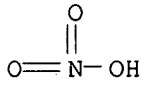
Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

IT **10377-60-3, Magnesium dinitrate**
RL: RCT (Reactant)
(reactions of, with potassium **phosphate** and **calcium nitrate**)
RN 10377-60-3 HCAPLUS
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

IT **10124-37-5, Calcium dinitrate**
RL: RCT (Reactant)
(reactions of, with potassium **phosphate** and **magnesium nitrate**)
RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

=> sel hit rn
E19 THROUGH E58 ASSIGNED

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L110 ANSWER 1 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **412319-78-9** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca4.3Mg0.7(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca4.3 H Mg0.7 O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4.3	7440-70-2
Mg	0.7	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:330502

L110 ANSWER 2 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **374930-58-2** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca1.5Mg3.5(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca1.5 H Mg3.5 O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	1.5	7440-70-2
Mg	3.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

L110 ANSWER 3 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-05-7** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca5 H2 Mg5 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	5	7440-70-2

Mg	5	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

REFERENCE 2: 133:338788

L110 ANSWER 4 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-04-6** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca4 H Mg O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4	7440-70-2
Mg	1	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

REFERENCE 2: 133:338788

L110 ANSWER 5 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-03-5** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca8.5Mg1.5(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca8.5 H2 Mg1.5 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	8.5	7440-70-2
Mg	1.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 6 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-02-4** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9 H2 Mg O26 P6

CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9	7440-70-2
Mg	1	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:24678

REFERENCE 2: 133:338788

L110 ANSWER 7 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-01-3** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.25Mg0.75(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.25 H2 Mg0.75 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.25	7440-70-2
Mg	0.75	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 8 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303955-00-2** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.5Mg0.5(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.5 H2 Mg0.5 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.5	7440-70-2
Mg	0.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 9 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **303954-99-6** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.75Mg0.25(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.75 H2 Mg0.25 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.75	7440-70-2
Mg	0.25	7439-95-4

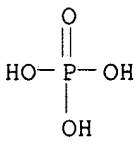
1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 10 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **137524-23-3** REGISTRY
CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Hydroxylapatite (Ca5(OH)(PO4)3), mixt. contg. (9CI)
MF Ca . H3 O4 P . H O . x Mg . O4 P
AF Ca5 H O13 P3 . H3 O4 P . x Mg
CI MXS
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

CM 1

CRN 10043-83-1 (7664-38-2)
CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5
CMF Ca . H O . O4 P
CCI MNS, TIS

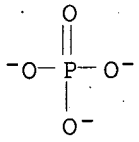
CM 3

CRN 14280-30-9
CMF H O

OH^-

CM 4

CRN 14265-44-2
CMF O4 P



CM 5

CRN 7440-70-2
CMF Ca

Ca

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 129:249236

REFERENCE 2: 115:263521

L110 ANSWER 11 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **134382-91-5** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.52Mg0.48(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.52 H2 Mg0.48 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.52	7440-70-2
Mg	0.48	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 12 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **134382-90-4** REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca9.9Mg0.1(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.9 H2 Mg0.1 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.9	7440-70-2
Mg	0.1	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 13 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **134382-56-2** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca6.67Mg3.33(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca6.67 H2 Mg3.33 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	6.67	7440-70-2
Mg	3.33	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 14 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **134382-55-1** REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.09Mg0.91(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca9.09 H2 Mg0.91 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.09	7440-70-2
Mg	0.91	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 15 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **127836-54-8** REGISTRY
CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
AF Ca0-5 H Mg0-5 O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

3 REFERENCES IN FILE CA (1967 TO DATE)
3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 125:204451

REFERENCE 2: 124:216642

REFERENCE 3: 113:25614

L110 ANSWER 16 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **119029-00-4** REGISTRY
CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)
MF **Ca . H O . Mg . O4 P**
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:147770

REFERENCE 2: 110:87299

L110 ANSWER 17 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **12167-74-7** REGISTRY
CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium phosphate (Ca10(OH)2(PO4)6) (6CI)
OTHER NAMES:
CN Calcium hydroxide phosphate (Ca10(OH)2(PO4)6)
CN Calcium hydroxyphosphate (Ca10(OH)2(PO4)6)

CN Calcium hydroxyphosphate (Ca5(PO4)3OH)
CN Calcium phosphate (Ca5OH(PO4)3)
CN Calcium phosphate hydroxide (Ca10(PO4)6(OH)2)
CN Calcium phosphate hydroxide (Ca5(PO4)3(OH))
CN Calcium tribasic phosphate
CN Decacalcium hexaphosphate dihydroxide
CN Pentacalcium hydroxide triphosphate
DR 1337-78-6, 29796-40-5, 205873-50-3, 221359-86-0
MF Ca . H O . O4 P
AF Ca5 H O13 P3
CI COM, TIS
LC STN Files: BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, IFICDB, IFIPAT, IFIUDB, IPA, MSDS-OHS, TOXCENTER, USAN, USPATFULL, VTB
Other Sources: DSL**, EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

1051 REFERENCES IN FILE CA (1967 TO DATE)
80 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1053 REFERENCES IN FILE CAPLUS (1967 TO DATE)
30 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147227

REFERENCE 2: 137:112931

REFERENCE 3: 137:112826

REFERENCE 4: 137:98554

REFERENCE 5: 137:97335

REFERENCE 6: 137:66706

REFERENCE 7: 137:40727

REFERENCE 8: 137:36382

REFERENCE 9: 137:24678

REFERENCE 10: 137:9707

L110 ANSWER 18 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN **1306-06-5** REGISTRY
CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Hydroxylapatite (8CI)
OTHER NAMES:
CN Apaceram
CN APAFILL-G
CN Apatite
CN Apatite hydroxide (Ca10(PO4)6(OH)2)
CN Boneceram P
CN Bonfil
CN Calcium hydroxyapatite
CN Durapatite

CN FKI
CN HAP-B
CN Hy-Apatite
CN **Hydroxyapatite**
CN Interpore 200
CN Interpore 500
CN Monite
CN Supertite 10
CN Synamel
CN Tri-Tab
DR 12440-80-1, 136841-77-5, 196875-13-5
MF Ca . H O . O4 P
AF Ca5 H O13 P3
CI MNS, COM, TIS
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

10763 REFERENCES IN FILE CA (1967 TO DATE)
310 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
10788 REFERENCES IN FILE CAPLUS (1967 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147891

REFERENCE 2: 137:145842

REFERENCE 3: 137:145666

REFERENCE 4: 137:145651

REFERENCE 5: 137:145643

REFERENCE 6: 137:145635

REFERENCE 7: 137:145562

REFERENCE 8: 137:145508

REFERENCE 9: 137:145505

REFERENCE 10: 137:145503

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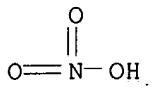
L111 ANSWER 1 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **10377-60-3** REGISTRY
CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Magnesium dinitrate

CN Magnesium nitrate
CN Magniosan
DR 50908-84-4
MF H N O3 . 1/2 Mg
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM, DETHERM*, DIPPR*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7697-37-2)



1/2 Mg

3375 REFERENCES IN FILE CA (1967 TO DATE)
44 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3385 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149420

REFERENCE 2: 137:149397

REFERENCE 3: 137:147680

REFERENCE 4: 137:144810

REFERENCE 5: 137:144787

REFERENCE 6: 137:144090

REFERENCE 7: 137:142126

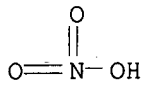
REFERENCE 8: 137:129074

REFERENCE 9: 137:128475

REFERENCE 10: 137:127303

L111 ANSWER 2 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **10124-37-5** REGISTRY
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Calcium dinitrate
CN Calcium nitrate
CN Calcium nitrate (Ca(NO3)2)
CN Nitric acid calcium salt (2:1)
CN Norge saltpeter
CN Norway saltpeter
CN Norwegian saltpeter
CN Synfat 1006
DR 56532-05-9, 94079-75-1, 95680-75-4, 292135-47-8
MF Ca . 2 H N O3

CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7697-37-2)



1/2 Ca

5942 REFERENCES IN FILE CA (1967 TO DATE)
51 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5948 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145463

REFERENCE 2: 137:144810

REFERENCE 3: 137:144446

REFERENCE 4: 137:140075

REFERENCE 5: 137:136927

REFERENCE 6: 137:131142

REFERENCE 7: 137:129937

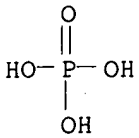
REFERENCE 8: 137:129931

REFERENCE 9: 137:129783

REFERENCE 10: 137:129183

L111 ANSWER 3 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **10043-83-1** REGISTRY
CN Phosphoric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Magnesium acid phosphate
CN Magnesium orthophosphate
CN Magnesium phosphate
MF H3 O4 P . x Mg
CI COM
LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAPLUS, CBNB, CHEMCATS, CHEMLIST, CIN, CSNB, DIOGENES, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NAPRALERT, PDLCOM*, PIRA, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7664-38-2)



x Mg

788 REFERENCES IN FILE CA (1967 TO DATE)
14 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
788 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145248

REFERENCE 2: 137:95301

REFERENCE 3: 137:67945

REFERENCE 4: 137:65565

REFERENCE 5: 137:53551

REFERENCE 6: 137:51521

REFERENCE 7: 137:27205

REFERENCE 8: 136:406928

REFERENCE 9: 136:345527

REFERENCE 10: 136:275832

L111 ANSWER 4 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **10043-52-4** REGISTRY
CN Calcium chloride (CaCl2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium chloride (8CI)
OTHER NAMES:
CN Bovikalc
CN Calcium dichloride
CN Calcium(2+) chloride
CN Calcosan
CN Calmate R
CN Calol
CN Calzina oral
CN Chrysoxel C 4
CN Daraccel
CN Dowflake
CN Liquidow
CN Peladow
CN Stopit
CN U-Ramin MC
DR 139468-93-2
MF Ca Cl2
CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Cl—Ca—Cl

28652 REFERENCES IN FILE CA (1967 TO DATE)
210 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
28677 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:147113

REFERENCE 2: 137:147092

REFERENCE 3: 137:146919

REFERENCE 4: 137:145646

REFERENCE 5: 137:145645

REFERENCE 6: 137:145612

REFERENCE 7: 137:145525

REFERENCE 8: 137:145226

REFERENCE 9: 137:145190

REFERENCE 10: 137:144947

L111 ANSWER 5 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7789-75-5** REGISTRY
CN Calcium fluoride (CaF2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium fluoride (8CI)
OTHER NAMES:
CN Calcium difluoride
CN Calcium difluoride (CaF2)
CN Irtran 3
DR 29070-15-3
MF Ca F2
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, DIPPR*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

F—Ca—F

18307 REFERENCES IN FILE CA (1967 TO DATE)
203 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
18318 REFERENCES IN FILE CAPLUS (1967 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:148103

REFERENCE 2: 137:148102

REFERENCE 3: 137:147894

REFERENCE 4: 137:147147

REFERENCE 5: 137:146626

REFERENCE 6: 137:146126

REFERENCE 7: 137:145504

REFERENCE 8: 137:143576

REFERENCE 9: 137:143509

REFERENCE 10: 137:142543

L111 ANSWER 6 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7789-48-2** REGISTRY
CN Magnesium bromide (MgBr2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Magnesium bromide (8CI)
OTHER NAMES:
CN Magnesium dibromide
DR 53168-84-6
MF Br2 Mg
CI COM
LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, DETHERM*, DIOGENES, GMELIN*, IFICDB, IFIPAT, IFIUDB, MRCK*, MSDS-OHS, PDLCOM*, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Br—Mg—Br

1087 REFERENCES IN FILE CA (1967 TO DATE)
22 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1087 REFERENCES IN FILE CAPLUS (1967 TO DATE)
10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420

REFERENCE 2: 137:132913

REFERENCE 3: 137:114227

REFERENCE 4: 137:103111

REFERENCE 5: 137:93702

REFERENCE 6: 137:93382

REFERENCE 7: 137:78852

REFERENCE 8: 137:65292

REFERENCE 9: 137:62903

REFERENCE 10: 137:33696

L111 ANSWER 7 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7789-41-5** REGISTRY
CN Calcium bromide (CaBr2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium bromide (6CI, 8CI)
OTHER NAMES:
CN Calcium dibromide
MF Br2 Ca
CI COM
LC STN Files: AGRICOLA, AQUIRE, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, PDLCOM*, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Br—Ca—Br

1093 REFERENCES IN FILE CA (1967 TO DATE)
22 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1093 REFERENCES IN FILE CAPLUS (1967 TO DATE)
53 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:132913

REFERENCE 2: 137:130323

REFERENCE 3: 137:103111

REFERENCE 4: 137:86000

REFERENCE 5: 137:82792

REFERENCE 6: 137:81235

REFERENCE 7: 137:65522

REFERENCE 8: 137:65292

REFERENCE 9: 137:65280

REFERENCE 10: 137:65206

L111 ANSWER 8 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7786-30-3** REGISTRY
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:

CN Magnesium chloride (6CI, 7CI, 8CI)
OTHER NAMES:
CN Aerotex Accelerator MX
CN Catalyst G
CN Magnesium dichloride
CN Magnogene
CN TMT 2
DR 12285-34-6, 77069-22-8
MF Cl2 Mg
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PHAR, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Cl—Mg—Cl

21450 REFERENCES IN FILE CA (1967 TO DATE)
509 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
21468 REFERENCES IN FILE CAPLUS (1967 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420

REFERENCE 2: 137:147649

REFERENCE 3: 137:147548

REFERENCE 4: 137:145645

REFERENCE 5: 137:145495

REFERENCE 6: 137:145226

REFERENCE 7: 137:145190

REFERENCE 8: 137:144947

REFERENCE 9: 137:144885

REFERENCE 10: 137:144823

L111 ANSWER 9 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7783-40-6** REGISTRY
CN Magnesium fluoride (MgF2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Magnesium fluoride (8CI)
OTHER NAMES:
CN Afluon
CN Irtran 1
CN Magnesium difluoride
CN Magnesium difluoride (MgF2)
MF F2 Mg
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS,

CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PHARMASEARCH, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

F—Mg—F

7132 REFERENCES IN FILE CA (1967 TO DATE)
63 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7137 REFERENCES IN FILE CAPLUS (1967 TO DATE)
38 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420

REFERENCE 2: 137:148102

REFERENCE 3: 137:147147

REFERENCE 4: 137:146783

REFERENCE 5: 137:146774

REFERENCE 6: 137:146126

REFERENCE 7: 137:132913

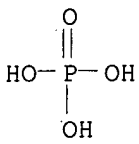
REFERENCE 8: 137:132236

REFERENCE 9: 137:131999

REFERENCE 10: 137:131998

L111 ANSWER 10 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7783-28-0** REGISTRY
CN Phosphoric acid, diammonium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Akoustan A
CN Ammonium dibasic phosphate
CN Ammonium hydrogen phosphate
CN Ammonium hydrogen phosphate ((NH4)2HPO4)
CN Ammonium monohydrogen orthophosphate
CN Ammonium monohydrogen phosphate
CN Ammonium orthophosphate dibasic
CN Ammonium phosphate ((NH4)2(HPO4))
CN Ammonium phosphate dibasic
CN Coaltrol LPA 445
CN Diammonium acid phosphate
CN Diammonium hydrogen orthophosphate
CN Diammonium hydrogen phosphate
CN Diammonium hydrogen phosphate ((NH4)HPO4)
CN Diammonium monohydrogen phosphate
CN Diammonium orthophosphate
CN Diammonium phosphate
CN Dibasic ammonium phosphate
CN Hydrogen diammonium phosphate
CN K 2
CN K 2 (phosphate)
CN Pelor

CN Phos-Chek 202A
CN Phosphoric acid ammonium salt (1:2)
CN Secondary ammonium phosphate
MF H3 N . 1/2 H3 O4 P
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7664-38-2)



●2 NH_3

4800 REFERENCES IN FILE CA (1967 TO DATE)
54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4804 REFERENCES IN FILE CAPLUS (1967 TO DATE)
16 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145463

REFERENCE 2: 137:145430

REFERENCE 3: 137:142587

REFERENCE 4: 137:139970

REFERENCE 5: 137:139413

REFERENCE 6: 137:129931

REFERENCE 7: 137:126543

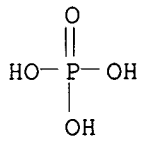
REFERENCE 8: 137:126533

REFERENCE 9: 137:116063

REFERENCE 10: 137:110704

L111 ANSWER 11 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7758-87-4** REGISTRY
CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN .alpha.-Tricalcium phosphate
CN .beta.-TCP
CN .beta.-Tricalcium phosphate
CN .beta.-Whitlockite
CN Apamicron AP 12C
CN Bonarka
CN Calcium orthophosphate

CN Calcium orthophosphate (Ca3(PO4)2)
CN Calcium phosphate
CN Calcium phosphate (3:2)
CN Calcium phosphate (Ca3(PO4)2)
CN Calcium tertiary phosphate
CN Multifos
CN Ostram
CN Phosphoric acid calcium(2+) salt (2:3)
CN Posture
CN Posture (calcium supplement)
CN Synthograft
CN Synthos
CN TCP
CN TCP 10
CN Tertiary calcium phosphate
CN Tribasic calcium phosphate
CN Tricalcium diphosphate
CN Tricalcium orthophosphate
CN Tricalcium phosphate
CN Tricalcium phosphate (Ca3(PO4)2)
DR 1344-15-6, 123211-19-8
MF Ca . 2/3 H3 O4 P
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PHAR, PIRA, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7664-38-2)



3/2 Ca

5766 REFERENCES IN FILE CA (1967 TO DATE)
100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5776 REFERENCES IN FILE CAPLUS (1967 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145643

REFERENCE 2: 137:145622

REFERENCE 3: 137:145500

REFERENCE 4: 137:145485

REFERENCE 5: 137:145466

REFERENCE 6: 137:145465

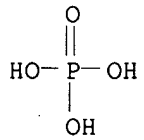
REFERENCE 7: 137:145464

REFERENCE 8: 137:145463

REFERENCE 9: 137:145448

REFERENCE 10: 137:145439

L111 ANSWER 12 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7758-23-8** REGISTRY
CN Phosphoric acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Acid calcium phosphate
CN C 38
CN C 38 (phosphate)
CN Calcium biphosphate
CN Calcium bis(dihydrogen phosphate)
CN Calcium dihydrogen orthophosphate
CN Calcium dihydrogen phosphate
CN Calcium diorthophosphate
CN Calcium hydrogen phosphate (Ca(H2PO4)2)
CN Calcium monobasic phosphate
CN Calcium orthophosphate monobasic
CN Calcium phosphate (1:2)
CN Calcium phosphate (Ca(H2PO4)2)
CN Calcium phosphate monobasic
CN Calcium phosphate, primary
CN Calcium superphosphate
CN Calcium tetrahydrogen orthophosphate
CN Calcium tetrahydrogen phosphate
CN Monobasic calcium phosphate
CN Monocalcium orthophosphate
CN Monocalcium phosphate
CN Monocalcium phosphate (Ca(H2PO4)2)
CN V 90
MF Ca . 2 H3 O4 P
CI COM
LC STN Files: AGRICOLA, AQUIRE, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DETHERM*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7664-38-2)



1/2 Ca

1880 REFERENCES IN FILE CA (1967 TO DATE)
16 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1883 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:140001

REFERENCE 2: 137:139968

REFERENCE 3: 137:139736

REFERENCE 4: 137:129946

REFERENCE 5: 137:127131

REFERENCE 6: 137:125177

REFERENCE 7: 137:124739

REFERENCE 8: 137:110485

REFERENCE 9: 137:110323

REFERENCE 10: 137:110208

L111 ANSWER 13 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7757-93-9** REGISTRY
CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN A-Tab
CN Anhydrous Emcompress
CN Biofos
CN Calcium acid phosphate
CN Calcium dibasic phosphate
CN Calcium hydrogen orthophosphate
CN Calcium hydrogen phosphate
CN Calcium hydrogen phosphate (CaHPO4)
CN Calcium monohydrogen orthophosphate
CN Calcium monohydrogen phosphate
CN Calcium orthophosphate (CaHPO4)
CN Calcium phosphate (1:1)
CN Calcium phosphate (CaHPO4)
CN Calcium secondary phosphate
CN D.C.P. 340
CN DCP
CN DCPA
CN Dibasic calcium phosphate
CN Dicafos AN
CN Dicalcium orthophosphate
CN Dicalcium phosphate
CN Fujicalin
CN Fujicalin S
CN Ipifosc 20
CN Monocalcium acid phosphate
CN Monocalcium phosphate
CN Monohydrogen calcium phosphate
DR 17248-11-2, 155420-92-1, 53168-52-8, 288297-00-7
MF Ca . H3 O4 P
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, TOXCENTER, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
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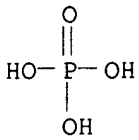
CRN (7664-38-2)



Ca

4306 REFERENCES IN FILE CA (1967 TO DATE)
32 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4310 REFERENCES IN FILE CAPLUS (1967 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145504

REFERENCE 2: 137:145485

REFERENCE 3: 137:145344

REFERENCE 4: 137:140001

REFERENCE 5: 137:139995

REFERENCE 6: 137:139968

REFERENCE 7: 137:139736

REFERENCE 8: 137:129946

REFERENCE 9: 137:129937

REFERENCE 10: 137:129891

L111 ANSWER 14 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7757-87-1** REGISTRY
CN Phosphoric acid, magnesium salt (2:3) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Magnesium phosphate (Mg3(PO4)2)
CN Tribasic magnesium phosphate
CN Trimagnesium diorthophosphate
CN Trimagnesium diphosphate
CN Trimagnesium phosphate
DR 9079-62-3, 83677-34-3
MF H3 O4 P . 3/2 Mg
LC STN Files: BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MRCK*, MSDS-OHS, TOXCENTER, USAN, USPATFULL, VETU, VTB
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Other Sources: EINECS**, NDSL**, TSCA**
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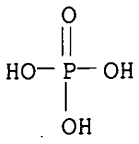
CRN (7664-38-2)



3/2 Mg

614 REFERENCES IN FILE CA (1967 TO DATE)
54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
616 REFERENCES IN FILE CAPLUS (1967 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:68178

REFERENCE 2: 137:8642

REFERENCE 3: 136:389043

REFERENCE 4: 136:315590

REFERENCE 5: 136:308528

REFERENCE 6: 136:189313

REFERENCE 7: 136:123590

REFERENCE 8: 136:107585

REFERENCE 9: 136:5270

REFERENCE 10: 135:307182

L111 ANSWER 15 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7558-80-7** REGISTRY
CN Phosphoric acid, monosodium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Dihydrogen monosodium phosphate
CN Dihydrogen sodium phosphate
CN Monobasic sodium phosphate
CN Monobasic sodium phosphate (NaH2PO4)
CN Monosodium dihydrogen orthophosphate
CN Monosodium hydrogen phosphate
CN Monosodium phosphate
CN Sodium dihydrogen monophosphate
CN Sodium dihydrogen orthophosphate
CN Sodium dihydrogen phosphate
CN Sodium dihydrogen phosphate (NaH2PO4)
CN Sodium hydrogen phosphate (NaH2PO4)
CN Sodium monobasic phosphate (NaH2PO4)
CN Sodium orthophosphate monobasic
CN Sodium phosphate (Na(H2PO4))
CN Sodium phosphate, monobasic
CN Sodium primary phosphate
DR 1333-80-8, 89140-32-9
MF H3 O4 P . Na
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST,

CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
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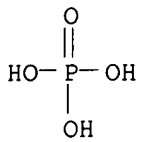
CRN (7664-38-2)



Na

4508 REFERENCES IN FILE CA (1967 TO DATE)
39 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4513 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:146895

REFERENCE 2: 137:141044

REFERENCE 3: 137:129950

REFERENCE 4: 137:128244

REFERENCE 5: 137:126684

REFERENCE 6: 137:124740

REFERENCE 7: 137:124475

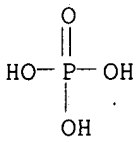
REFERENCE 8: 137:124466

REFERENCE 9: 137:118596

REFERENCE 10: 137:116050

L111 ANSWER 16 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7558-79-4** REGISTRY
CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Acetest
CN Anhydrous sodium acid phosphate
CN Dibasic sodium phosphate
CN Disodium acid orthophosphate
CN Disodium acid phosphate
CN Disodium hydrogen orthophosphate (Na2HPO4)
CN Disodium hydrogen phosphate
CN Disodium hydrophosphate
CN Disodium monohydrogen phosphate
CN Disodium orthophosphate
CN Disodium phosphate
CN Disodium phosphate (Na2HPO4)
CN DSP
CN Exsiccated sodium phosphate
CN Hydrogen disodium phosphate

CN Hydrogen sodium phosphate (HNa2PO4)
CN Monohydrogen disodium phosphate
CN Soda Phosphate
CN Sodium monohydrogen phosphate
CN Sodium orthophosphate dibasic
CN Sodium phosphate (Na2HPO4)
CN Sodium phosphate, dibasic
DR 148560-76-3
MF H3 O4 P . 2 Na
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7664-38-2)



2 Na

5529 REFERENCES IN FILE CA (1967 TO DATE)
40 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5536 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:147113

REFERENCE 2: 137:145645

REFERENCE 3: 137:145637

REFERENCE 4: 137:145575

REFERENCE 5: 137:145485

REFERENCE 6: 137:141044

REFERENCE 7: 137:139638

REFERENCE 8: 137:129901

REFERENCE 9: 137:129587

REFERENCE 10: 137:128244

L111 ANSWER 17 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **7439-95-4** REGISTRY
CN Magnesium (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN JIS 1
CN Magnesium element

CN PK 31
CN PK 31 (magnesium)
CN Rieke's active magnesium
DR 14147-08-1, 67208-78-0, 199281-20-4, 298688-48-9
MF Mg
CI COM
LC STN Files: ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, TOXCENTER, ULIDAT, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Mg

153813 REFERENCES IN FILE CA (1967 TO DATE)
6044 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
153955 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149438

REFERENCE 2: 137:149425

REFERENCE 3: 137:149422

REFERENCE 4: 137:149402

REFERENCE 5: 137:149384

REFERENCE 6: 137:149380

REFERENCE 7: 137:149370

REFERENCE 8: 137:149197

REFERENCE 9: 137:148908

REFERENCE 10: 137:148368

L111 ANSWER 18 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **1309-48-4** REGISTRY
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 1000A
CN 100A
CN 100A (oxide)
CN 500A
CN 995S
CN AM 2
CN AM 2 (cement additive)
CN Animag
CN Anscor P
CN BayMag
CN Calcined magnesia
CN Causmag
CN Caustic magnesite
CN Elastomag 100
CN Elastomag 170

CN Fert-O-Mag
CN FloMag HP
CN FloMag HP-ER
CN FMR-PC
CN H 10
CN H 10 (oxide)
CN Hamag LP
CN HP 10
CN HP 10 (oxide)
CN HP 10N
CN HP 30
CN HP 30 (oxide)
CN Insulmag 4
CN KM 3
CN KM 3 (oxide)
CN KM 40
CN KMAOH-F
CN KMB 100-200
CN Kyowaad 100
CN Kyowamag 100
CN Kyowamag 150
CN Kyowamag 150B
CN Kyowamag 150C
CN Kyowamag 20
CN Kyowamag 30
CN Kyowamag 40
CN Kyowamag 60
CN Kyowaway 150
CN Liquimag A
CN Liquimag B
CN Luvatol MK 35
CN Mag Chem 10
CN Mag Chem 10-200
CN Mag Chem 10-325
CN Mag Chem 10-40
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 13589-16-7, 82375-77-7, 52933-73-0, 185461-91-0, 187036-80-2
MF Mg O
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PHARMASEARCH, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Mg=O

71311 REFERENCES IN FILE CA (1967 TO DATE)
769 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
71377 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149441

REFERENCE 2: 137:149432

REFERENCE 3: 137:149114

REFERENCE 4: 137:148642

REFERENCE 5: 137:148585

REFERENCE 6: 137:148483

REFERENCE 7: 137:148457

REFERENCE 8: 137:148359

REFERENCE 9: 137:148217

REFERENCE 10: 137:148204

L111 ANSWER 19 OF 22 'REGISTRY COPYRIGHT 2002 ACS
RN **1309-42-8** REGISTRY
CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 10A
CN 200-06H
CN Alcanex NHC 25
CN Asahi Glass 200-06
CN Combustrol 500
CN Daimushew 6000
CN DP 393
CN DSB 100
CN Duhor
CN Duhor N
CN Ebson RF
CN Finemag MO-T
CN Finemag SN-L
CN FloMag H
CN FloMag HUS
CN FR 20
CN FR 20-310
CN Hydrofy G 1.5
CN Hydrofy G 2.5
CN Hydrofy N
CN Ki 22-5B
CN Kisma KX 4SU
CN Kisuma
CN Kisuma 120
CN Kisuma 2
CN Kisuma 3A
CN Kisuma 4AF
CN Kisuma 5
CN Kisuma 5A
CN Kisuma 5A-N
CN Kisuma 5AU
CN Kisuma 5B
CN Kisuma 5B-N
CN Kisuma 5BG
CN Kisuma 5E
CN Kisuma 5EU
CN Kisuma 5J
CN Kisuma 7B
CN Kisuma KX 4SU
CN Kisuma S 4
CN KX 4S
CN KX 80
CN KX 8S(A)

CN KX 8S(B)
CN Kyowamag F
CN Lycal 96HSE
CN Mag Chem MH 10
CN MagneClear 58
CN Magnesia hydrate
CN Magnesia Magma
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 12195-86-7, 13760-51-5
MF H2 Mg O2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

HO—Mg—OH

10451 REFERENCES IN FILE CA (1967 TO DATE)
149 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
10461 REFERENCES IN FILE CAPLUS (1967 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145571

REFERENCE 2: 137:145561

REFERENCE 3: 137:145234

REFERENCE 4: 137:142548

REFERENCE 5: 137:142514

REFERENCE 6: 137:141600

REFERENCE 7: 137:141572

REFERENCE 8: 137:141571

REFERENCE 9: 137:141509

REFERENCE 10: 137:141497

L111 ANSWER 20 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **1305-62-0** REGISTRY
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium hydroxide (8CI)
OTHER NAMES:
CN A-Rock
CN Biocalc
CN Calbit
CN Calbreed
CN Calcium dihydroxide
CN Caldic 1000

CN Calvit
CN Carboxide
CN CH 2N
CN CLS-B
CN Hydralime
CN Hydrated lime
CN Kalkhydrate
CN Kentoku K 100
CN Limbux
CN Lime hydrate
CN Lime milk
CN Lime water
CN Milk of lime
CN NICC 3000
CN Rhenofit CF
CN SA 074
CN Slaked lime
CN Super Microstar
CN TP 2B
CN Yukijirushisakanyo
DR 7719-01-9, 1333-29-5
MF Ca H2 O2
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

HO—Ca—OH

20961 REFERENCES IN FILE CA (1967 TO DATE)
242 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
20981 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145607

REFERENCE 2: 137:145464

REFERENCE 3: 137:145463

REFERENCE 4: 137:145430

REFERENCE 5: 137:145234

REFERENCE 6: 137:145085

REFERENCE 7: 137:144779

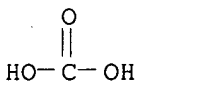
REFERENCE 8: 137:144769

REFERENCE 9: 137:144755

REFERENCE 10: 137:144460

L111 ANSWER 21 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN **546-93-0** REGISTRY
CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Magnesium carbonate (6CI, 7CI)
OTHER NAMES:
CN Apolda
CN C.I. 77713
CN Carbonate magnesium
CN DCI Light Magnesium Carbonate
CN Destab
CN Gold Star
CN Gold Star (carbonate)
CN GP 20
CN GP 20 (carbonate)
CN GP 30
CN GP 30 (carbonate)
CN Kimboshi
CN MA 70 (carbonate)
CN Magfy
CN Magnesium carbonate (1:1)
CN Magnesium carbonate ($MgCO_3$)
CN Stan-Mag Magnesium Carbonate
AR 7757-69-9
DR 1784-39-0, 183480-27-5, 364320-47-8
MF C H2 O3 . Mg
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (463-79-6)



Mg

6066 REFERENCES IN FILE CA (1967 TO DATE)
111 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
6075 REFERENCES IN FILE CAPLUS (1967 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147778

REFERENCE 2: 137:146089

REFERENCE 3: 137:145571

REFERENCE 4: 137:145535

REFERENCE 5: 137:145248

REFERENCE 6: 137:142898

REFERENCE 7: 137:135090

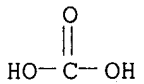
REFERENCE 8: 137:129962

REFERENCE 9: 137:129725

REFERENCE 10: 137:129326

L111 ANSWER 22 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN **471-34-1** REGISTRY
CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN .mu.-Powder 3N
CN .mu.-Powder 3S
CN 150B
CN 3N-A
CN ACE 25
CN ACE 35
CN Aeromatt
CN Akadama
CN Albacar
CN Albacar 5970
CN Albacar HO
CN Albacar LO
CN Albafil
CN Albaglos
CN Albaglos S
CN Albaglos SF
CN Allied Whiting
CN ASK 5
CN ASK 5 (carbonate)
CN Atomite
CN Atomite SSA 2114
CN AX 363
CN B 1002
CN BF 100
CN BF 100 (carbonate)
CN BF 200
CN BF 2000
CN BF 200S
CN BF 300
CN BFK 200
CN BKS 5
CN BL 50
CN BL 50 (antacid)
CN Brilliant 15
CN Brilliant 1500
CN Brilliant BR 15
CN Brilliant S 15
CN BS 32
CN BSK 5
CN BSK 5D
CN C 50
CN C 50 (carbonate)
CN C.I. 77220
CN C.I. Pigment White 18
CN Cal-light 3A
CN Cal-light A 7
CN Cal-light AS
CN Cal-light KT
CN Cal-light SA

CN Calcene CO
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
AR 15187-75-4
DR 166516-01-4, 172307-27-6, 60083-79-6, 63660-97-9, 114453-69-9, 137803-94-2, 72608-12-9, 71060-88-3, 146358-95-4, 39454-55-2, 180616-31-3, 251358-28-8
MF C H2 O3 . Ca
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PHARMASEARCH, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (463-79-6)



Ca

46618 REFERENCES IN FILE CA (1967 TO DATE)
290 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
46666 REFERENCES IN FILE CAPLUS (1967 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149198

REFERENCE 2: 137:148521

REFERENCE 3: 137:147778

REFERENCE 4: 137:147087

REFERENCE 5: 137:147008

REFERENCE 6: 137:146897

REFERENCE 7: 137:145504

REFERENCE 8: 137:145485

REFERENCE 9: 137:145431

REFERENCE 10: 137:145430

=> d his

(FILE 'HOME' ENTERED AT 09:06:15 ON 31 AUG 2002)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 09:06:35 ON 31 AUG 2002

```
                E HYDROXYAPATITE/CN
L1            1 S E3
L2           14 S 1306-06-5/CRN

     FILE 'REGISTRY' ENTERED AT 09:07:29 ON 31 AUG 2002

     FILE 'REGISTRY' ENTERED AT 09:08:15 ON 31 AUG 2002
L3            1 S L2 AND MG/ELS

     FILE 'HCAPLUS' ENTERED AT 09:10:24 ON 31 AUG 2002
L4        10789 S L1
L5        21688 S CA5 OH PO4 3 OR HYDROXYLAPATITE OR HYDROXYAPATITE OR HYDROXY#
L6        22737 S APACERAM OR APAFILL OR APATITE OR APATITE HYDROXIDE OR CA10 P
L7        40910 S L4-L6
L8        10789 S L4 AND L7
L9        30121 S L5,L6,L7 NOT L8
L10        1066 S L1/P AND L8

     FILE 'REGISTRY' ENTERED AT 09:13:42 ON 31 AUG 2002
L11           1 S MAGNESIUM/CN
                E MAGNESIUM/CN
                E MAGNESIUM HYDROXY/CN
                E MAGNESIUM, I/CN
                E MAGNESIUM, IO/CN
                E MAGNESIUM, ION/CN
L12           1 S E4
L13           1 S E17
                E HYDROXYLAPATITE, MAGNESIUM/CN
                E H MG5 O13 P3/MF
                E CA.HO.MG/MF
L14          19 S E12
L15         875 S (14280-30-9 AND 14265-44-2 AND 7440-70-2)/CRN
L16          83 S L15 AND MG/ELS
L17          82 S L16 AND 7439-95-4/CRN
L18           1 S L16 NOT L17
L19          63 S L17 NOT L14
L20          31 S L19 NOT (F OR CL OR BR OR I)/ELS
L21          15 S L20 NOT FE/ELS
L22           5 S L21 NOT 3812-32-6/CRN
L23          20 S L14,L18
L24          19 S L23 NOT L3

     FILE 'HCAPLUS' ENTERED AT 09:24:24 ON 31 AUG 2002
L25           2 S L3
L26          12 S L24
L27          13 S L25,L26 AND L7,L10
L28          14 S L25,L26,L27

     FILE 'REGISTRY' ENTERED AT 09:34:01 ON 31 AUG 2002
L29           1 S 12167-74-7
L30           2 S L1,L29

     FILE 'HCAPLUS' ENTERED AT 09:34:47 ON 31 AUG 2002
L31       11455 S L30
L32       11208 S L31 AND L5,L6
L33       11455 S L31,L32
L34       29537 S L5,L6 NOT L33
L35          13 S L25-L28 AND L33,L34
L36          14 S L25-L28,L35

     FILE 'REGISTRY' ENTERED AT 09:36:21 ON 31 AUG 2002
L37           1 S 7783-28-0
L38           1 S 7722-76-1
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L39       13526 S 7664-38-2/CRN
L40         508 S L39 AND H3N
L41          22 S L40 AND 2/NC
L42          13 S L41 NOT IDS/CI
L43          11 S L42 NOT 15N
L44          11 S L37,L38,L43
L45           1 S 1309-42-8
L46           1 S 1305-62-0

     FILE 'HCAPLUS' ENTERED AT 09:38:45 ON 31 AUG 2002
L47      161905 S L11,L12,L13
L48         251 S L47 AND L33
L49         504 S L47 AND L34
L50         755 S L48,L49
L51        4640 S L33,L34 AND (MG OR MAGNESIUM)
L52        4749 S L50,L51
L53         185 S L52 AND (L46 OR (CA OR CALCIUM)()HYDROXIDE OR CA OH 2 OR CAOH
L54          39 S L53 AND (L45 OR (MG OR MAGNESIUM)()HYDROXIDE OR MG OH 2 OR MG
L55           3 S L54 AND (L44 OR DIAMMONIUM HYDROGEN PHOSPHATE)

     FILE 'REGISTRY' ENTERED AT 09:41:38 ON 31 AUG 2002
L56           8 S (MAGNESIUM CARBONATE OR MAGNESIUM BROMIDE OR MAGNESIUM CHLORI
L57           9 S (CALCIUM CARBONATE OR CALCIUM BROMIDE OR CALCIUM CHLORIDE OR
L58           8 S (AMMONIUM PHOSPHATE OR CALCIUM PHOSPHATE OR MAGNESIUM PHOSPHA
L59        6598 S 463-79-6/CRN
L60           3 S L59 AND MG/ELS AND 2/NC NOT (IDS OR MNS)/CI
L61       11670 S 7697-37-2/CRN
L62           4 S L61 AND MG/ELS AND 2/NC NOT (IDS OR MNS)/CI
L63           2 S L62 NOT (GLYCINATO OR KAPPA)
L64           7 S L39 AND MG/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
L65          18 S L45,L56,L60,L63,L64
L66          11 S L59 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
L67           3 S L66 NOT (40CA OR 42CA OR 43CA OR 45CA OR 46CA OR 44CA OR LYSI
L68           4 S L61 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
L69          13 S L39 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
L70          11 S L69 NOT 45CA#
L71          19 S L57,L70,L46
L72          15 S L39 AND NA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
L73          13 S L72 NOT (PROPANEDIOL OR FNA)
L74          42 S L44,L64,L70,L73

     FILE 'HCAPLUS' ENTERED AT 09:57:51 ON 31 AUG 2002
L75         568 S L65 AND L52
L76         683 S L65 AND L33,L34
L77         683 S L75,L76
L78         513 S L77 AND L71
L79         235 S L78 AND L74
L80          22 S L79 AND L30/P
L81         167 S L79 AND L30
L82           3 S L79 AND L36
L83          10 S L36 AND L65,L71,L74
L84          10 S L82,L83
L85           4 S L36 NOT L84
L86          14 S L84,L85 AND L4-L10,L25-L28,L31-L36,L47-L55,L75-L85
L87          14 S L86 AND (CA OR CALCIUM OR PO4 OR PHOSPHATE OR OH OR HYDROXY#
L88          14 S L86 AND (?CALCIUM OR ?PHOSPHATE OR ?HYDROXY OR ?MAGNESIUM OR
L89          14 S L87,L88
                E RIMAN R/AU
L90         102 S E3,E4,E6,E7,E8
                E SUCHANEK W/AU
L91          32 S E3,E6,E7
                E WOJCIECH/AU
                E SHUK P/AU
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L92           61 S E3-E6
                 E TENHUISEN K/AU
L93           25 S E4,E6-E8
                 E TEN HUISEN K/AU
                 E TEN H/AU
                 E HUISEN/AU
L94          213 S L90-L93
L95           35 S L94 AND L33,L34
L96            1 S L95 AND L52
L97            0 S L95 AND L89
L98           35 S L95 AND L4-L10,L25-L28,L31-L36,L47-L55,L75-L97
L99           18 S L98 AND L65,L71,L74
L100           0 S L99 AND L47,L36
L101           1 S L99 AND (MG OR MAGNESIUM)
L102          15 S L96,L101,L89
L103          22 S L80 NOT L102
                 SEL DN AN 7 10 11 15 18 22
L104           6 S L103 AND E1-E18
L105          21 S L102,L104
L106          21 S L105 AND (MG OR CA OR PO4 OR MAGNESIUM OR CALCIUM OR PHOSPHAT
L107           4 S L106 AND (NH3 OR AMMON?)
L108          17 S L106 NOT L107

     FILE 'HCAPLUS' ENTERED AT 10:25:08 ON 31 AUG 2002
                 SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 10:25:44 ON 31 AUG 2002
L109          40 S E19-E58
L110          18 S L109 AND L1,L2,L24,L30
L111          22 S L109 NOT L110
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